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Some Notes on Plastic Surgery.*

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When Capt. Macdonald invited me to read a paper, he suggested that I should deal with an equine subject and endeavour to promote a good discussion.

With his first suggestion I was unable to comply, as for the last twenty years my practice has been principally canine, but I hope to be successful in promoting a good discussion as I have no doubt that many of the Fellows of this Society have had more extensive experience of the subject than has fallen to my lot, and will doubtless bring forward cases with which I have omitted to deal.

At the last meeting the essayist, Mr. Livesey, dwelt upon what he described as a lack of care in surface surgery, resulting in an untidy finish when the surgeon had acquired the primary object of his operation—such, for instance, as the removal of subcutaneous tumours. Whether or not this is a common fault I am not in a position to say. It is possible, however, that the niceties of the simple plastic operations do not always receive the consideration that is their due, and are apt to be regarded as mere hobbies of the beauty specialist rather than as valuable adjuncts to everyday surgery, and to the treatment and healing of wounds.

The subject in all its aspects is far beyond the scope of a short paper and an hour's discussion; indeed, a professor of surgery could lecture upon plastic surgery for a month without exhausting its interest. It occurred to me, however, that a discussion upon some of these operations might be of interest, and with a view to promoting such a discussion I have devoted my remarks to some of the plastic operations with which I have an intimate personal knowledge, leaving it to other speakers to fill in the obvious gaps. In "Plastic Surgery: Its Principles and Practice," Dr. John Stage Davis says: "By plastic and reconstructive surgery is meant that branch of surgery which deals with the repair of defects and malformations, whether congenital or acquired, and with the restoration of function and improvement of appearance."

The uses to which the ordinary plastic operations are generally put include the removal of unsightly scars, the release of contractures of tissues, the reduction of fractures and dislocations, the healing of wounds, the tightening up of relaxed tissues, and the correction of congenital or acquired deformities, whilst the tissues generally selected for such treatment are the skin and its appendages, the eye and its membranes, superficial muscles, cartilage, bones and the external genital organs.

Whilst it is often necessary to perform these operations in emergency without much forethought or preparation, it is always advisable, when time permits, thoroughly to map out this line of procedure and operative technique, and carefully to prepare the patient for operation.

No two plastic operations are exactly alike, and each must be treated as circumstances direct. The surgeon should, however, debate carefully in his own mind what is going to be the result of his operation, whether it will effect a complete or only a partial cure and whether or not the end he aims at can be accomplished in a single operation, or if some further surgical interference will be necessary.

The majority of plastic operations are essentially hospital cases, and should remain under the personal observation of the surgeon until definite progress towards recovery is advanced.

As a great number of these operations are performed upon healthy tissue and healing by first intention is the rule rather than the exception, detention of the patients in hospital is not necessarily prolonged or expensive.

Preparatory Measures.

The preparation of the patient should receive careful attention. In canine cases a course of dietary or of medicine, either to build up an animal in poor condition or to reduce a plethoric patient; a complete bath prior to operation, and other details which conduce both to the success of the surgeon and the comfort of the patient may be well worth while, whilst in equine patients the questions of restraint, of the necessity, advisability or otherwise of using slings, of the animal's fitness to stand on his feet for a week or two, or even longer, should that be necessary for the success of the treatment, have all to be taken into account. Shoes should be examined and removed if necessary. In the case of a "gummy-legged" horse a regular course of exercise with massage and cotton-wool bandaging may be advisable, whilst it is always a help in either class of patient to have an opportunity of familiarising oneself, prior to operation, with any temperamental peculiarities.

The patient's surroundings also call for attention. In the case of a well-equipped equine or canine hospital this comfort and hygienic well-being are studied as a matter of course, but when patients are operated upon and treated in their own homes a careful routine should be mapped out, and written instructions given to the attendant in charge.

In addition to the preparation of the patient, it is always wise, particularly if one has to operate single-handed without any skilled assistance, as often fell to my lot, to map out carefully every step in the proceedings from the administration of the narcotic or anæsthetic, local or general, to the final stage of suturing and bandaging.

All initial preparation, such as clipping of hair, shaving and disinfection of skin should, of course, be done before the operation proper is embarked upon, and in many cases completed on the day prior to operation.

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All drugs necessary for narcosis, anæsthesia and antisepsis should be selected and collected so as to be readily accessible when wanted without confusion or delay. The necessary instruments, properly sterilised, should be set out in such receptacles that the operator can instantly pick up the one required. Suture needles should be ready threaded and laid out in such a manner that their sutures cannot become entangled — preferably by drawing the needles into a piece of sterilised gauze, about one inch apart.

Deliberate speed, without haste or hesitation, is essential to successful surgery, and the surgeon's head, hands and fingers should be constantly at work from start to finish of an operation, but that work should not consist of the threading of suture needles or of fumbling for an instrument amongst a jumbled mass of unwanted tools. All cutting instruments should be keen and sharp, to avoid unnecessary bruising of tissues.

The instruments provided should include several pairs of artery forceps, rat-tooth forceps and sharp hooks, and a good needle holder, in addition to the usual supply of scalpels, scissors, dressing forceps and directors.

For very fine work such as the removal of dermoids from the eyeball, the Bard-Parker knives, with very sharp, thin, detachable blades are most useful, including one of Symes' pattern.

A good supply of sterile swabs, of sizes suitable to the work in hand, should be provided. The use of loose cotton wool should be avoided, especially for mopping out or packing cavities, as loose strands get detached and left in such cavities as the orbital, and act as foreign bodies, interfering with the healing process.

If it is necessary to plug any cavity to control hæmorrhage this should be done by means of a swab of the correct size to fill it up or by a roll of gauze or ribbon bandage which can be easily extracted intact. All swabs, needles and forceps should be counted before and after the operation.

The use of effective anæsthetics, either local or general, or both, is necessary both from the humane point of view and in order to ensure good surgery. It may be usefully combined with a narcotic, such as cannabis indica or chloral hydrate in the horse, or morphia in the dog. When operating upon extremely sensitive and mobile organs such as the eye, ear or extremities, the nerve trunks should be blocked by a local anæsthetic, in addition to the narcotic or general anæsthetic employed. In certain instances it may be desirable to control post-operative pain, and for this purpose a solution of quinine and urea hydrochloride may be usefully employed either by injection into the surrounding tissues or by means of a sterile swab soaked in the solution in plugging such cavities as the orbital. I have heard it suggested that this drug retards healing, but this has not been my experience.

Hæmorrhage Control and the Use of Antiseptics.

The complete control of all hæmorrhage before finally closing a surgical wound is essential to good healing. The formation of a hæmatoma within the wound prevents the early acquisition of a new blood supply.

On the other hand, circulation must not be interfered with, and the very careful adjustment of sutures and bandages, in order to avoid any arrest of free circulation through pressure or undue tension, is necessary.

The use of adrenalin as a means of controlling hæmorrhage is unsurgical and should be avoided. If injected into the tissues it may lead to the closing of wounds upon severed capillary vessels which start to leak as soon as the action of the drug has passed off, giving rise to troublesome secondary hæmorrhage and the formation of hæmatomata. One may occasionally run across a hæmophiliac and get secondary hæmorrhage from this cause. An injection of Lapenta serum (hæmoplastin) will effectively and promptly control this trouble.

Asepsis rather than antisepsis should be aimed at, as infection is one of the chief causes of failure. For all delicate operations the surgeon should wear rubber gloves; these are so easily sterilised by boiling, and after a little practice one becomes quite deft in working in them. Also, if accidentally soiled during an operation, the hands can be plunged into almost boiling water and the operation proceeded with without delay. In addition to the increased safety of the patient and the more ready healing of wounds obtained by the use of sterile operating gloves. the surgeon avoids many unpleasant reminders of his work from the odour of blood and pungent antiseptics which clings to his skin for hours after his pores have been thoroughly opened by the attempt to render his bare hands sterile.

There are, however, frequent emergency cases in which asepsis is practically impossible, and then antiseptics must be used. At the last meeting several speakers referred to the bad effects resulting from the use of too strong antiseptics and quoted their preference for aseptic surgery.

Is not the blame thrown upon antiseptics often the result of careless dispensing and of the use of a solution made up in so haphazard a manner that it has ceased to be an antiseptic, and is either a powerful astringent, or a caustic solution, strong enough in either case to retard the primary healing of wounds by checking cell growth and humoral nutrition ?

Personally, I have never known any ill-results follow the use of carefully prepared solutions of acriflavine, eusol, Dakin's solution, peroxide of hydrogen. Carbolic acid I do not like, possibly because it reacts unpleasantly on my own skin.

In most of the plastic operations upon the skin a hyperæmia is essential to primary healing and an abundant flow of serum into the tissues acts both as an adhesive for the separated tissues when approximated, and also as a most valuable natural antiseptic. Pure glycerine acts as a prompt and most valuable seragogue, but castor sugar is, I think, even better. This is said to be 99% sterile and if sprinkled on to a raw surface causes large beads of serum to exude in a few seconds. Its action may be seen to great advantage in those cases of prolapsus uteri in the mare and cow in which, by prolonged exposure to the air, the prolapsed viscus has become dry and leathery.

Acriflavine (an antiseptic of which I used to be especially fond) is said to have its antiseptic properties greatly increased in the presence of normal blood serum.

It is a frequent practice to treat surface wounds which it is impossible to protect by bandages by painting their edges over with some antiseptic adhesive, such as collodion or wound gelatine, or a saturated solution of picric acid. Wound gelatine, which is prepared by dissolving sheets of gelatine in a hot 5% solution of carbolic acid, has one

very great advantage over collodion in that it can be painted over a damp wound. Collodion will only adhere to a dry surface. Whitehead's varnish, composed of benzoin, storax, balsam of tolu and ether, with 2% of iodoform dissolved in it, is useful in equine cases after suturing eyelids and torn nostrils. Latterly, however, I have come to the conclusion that all these preparations tend to get between the lips of the wounds, in the gaps between the sutures, and so retard healing, and I use them much less frequently than formerly.

Concerning Sutures.

The selection of suture material is a matter of personal choice. Personally, I now use plaited silk for almost every purpose. It is very strong for its size and weight, soft and flat, and does not easily cut out. Even if buried in the tissues I find I get very little buried suture trouble, and I have used it for several years for laparotomy wounds. Occasionally I use catgut or silk worm gut, but silk is my favourite suture material. Horsehair is very nice for very fine work.

In some of the more delicate plastic operations the scars left by sutures may cause disappointment, but if they are not too tight this may be avoided by the insertion of little pads of sterile wool between them and the skin.

The knots of a row of sutures should be tied at alternate sides of the wound, so as not to leave a continuous line of small depressions, whilst suture scars in certain instances, like those left after the extirpation of large elbow tumours, may be hidden from view by making the incision, and the consequent line of sutures, on the median side of the tumour, instead of the posterior surface.

The adherence of firm, dry scabs during the healing of wounds is a common cause of bald scars in veterinary patients, particularly in " broken knees " in horses. Their frequent and persistent removal will generally obviate the occurrence of these blemishes, although one occasionally meets with subjects, both equine and canine, in which the healing process is very slow and very easily arrested. In these cases the use of epidermal stimulants such as scarlet red ointment ; a dressing with osmotic action such as sugar, glycerine or hypertonic salt solution, or the production of a local hyperæmia by repeated mild blisters to the parts is indicated. Salicylic ointment or salicylate collodion may be used to soften the scabs.

On the other hand, profuse granulations may have to be checked by astringents, pressure or mild caustics, of which carbolic acid is the best, or it may be necessary to excise them. In all such cases the growth of new epidermis should be stimulated in order to hasten closure of the wound. An artificial epidermis such as picric acid, collodion or wound gelatine may be applied or the question of a graft or pedunculated flap from the adjoining skin considered.

Before either treatment is attempted the surface to be so healed must be rendered sterile. For this purpose it may be well irrigated with eusol or Dakin's solution or washed with ether. Ether destroys the red corpuscles in the wound, and also dissolves out fats. It is said that in this way the phagocytes are left unhampered, and that auto-sterilisation of the wound occurs.

" Cherry's Operation."

Whilst I am aware that free grafts from distant parts of the skin have been successfully transplanted, I have personally had such poor results from this line of treatment that I have abandoned it, finding a much more successful method in the utilisation of pedunculated flaps from the adjacent skin in which the blood supply to the parts is not interfered with or by the undercutting, sliding and suturing when approximated, of parallel ribbons of skin, both of whose extremities maintain their original attachments with their uninterrupted blood supply. This latter operation, which has been practised in human surgery for hundreds of years, has come to be known in veterinary practice as " Cherry's operation."

It is a most useful method of procedure for the removal of scar tissue and the healing of intractable wounds, and is greatly to be favoured by reason of its extreme simplicity, its adapability to many situations, and its almost invariable success.

To obtain the best results from this operation certain rules must be observed. In the first place, the wound must be thoroughly sterilised. All hair should be shaved off and the nude skin well washed with ether. The lines of the incisions to be made should be marked out upon the skin with indelible pencil, so that opposite incisions exactly correspond when brought into apposition and sutured, without any wrinkling or unevenness. The insertion of sutures should be commenced at one extremity of the wound thus made, the sutures being placed at regular intervals until the whole wound is closed. If parallel incisions have been made to prevent tension upon the sutures these are left to heal by granulation. This is the ideal method of removing scar tissue and is also most useful for the closure of accidental wounds in which contraction of the skin has taken place or into which bony prominences project and prevent union.

I have treated several cases of longitudinal wounds down the anterior aspect of the stifle joint in dogs and hounds by this process. In these wounds, usually caused by sharp stakes in jumping fences, the skin rapidly contracts to either side of the projecting joint, which effectually prevents union. If the edges of the skin are merely drawn together and sutured the sutures rapidly cut out. The relaxation provided by lateral incisions and the undercutting of ribbons of skin prior to suturing in the middle line prevents this trouble. An Elizabethan collar is applied to prevent the animal's interference with the wound, and healing rapidly results.

For the purpose of discussion, I propose to deal with a few of the plastic operations in regional sequence.

Operations on the Lips and Nostrils.

Commencing at the lips and nostrils, one gets many opportunities. Torn nostrils are of frequent occurrence in horses from their getting caught up on hooks, often the defective spring hooks of pillar reins and chains, whilst one occasionally gets a dog's nose badly torn in a fight. Either case responds well to simple suturing, although it may be necessary to suture the wounds more than once in order to get complete union. In the thick nostrils of cart horses it is sometimes possible to insert a buried

mattress suture of fine catgut, closing the skin over it with interrupted sutures of silk or horsehair.

On several occasions I have come across horses, principally cast army horses, with a perforating wound of the nasal bone. In some of these cases the skin had grown inwards around the edges of the wounds and, before healing treatment could be attempted, had to be dissected free. The edges of the wound, including the bone, were then scarified, and the skin approximated by undercutting, sliding into position and suturing. Circular wounds were extended upwards and downwards by parallel, semi-lunar incisions, and if lateral tension prevented them coming easily together in the middle line this was relieved by parallel incisions, on either side and by undercutting the ribbons of skin thus formed. The line of sutures was painted over with wound gelatine, and the lateral incisions treated with an antiseptic lotion or, if sufficiently vascular, a dusting powder.

Cleft palate and hare-lip are congenital deformities occasionally met with, especially in bull and Pekingese puppies. They may be dealt with by scarifying and repeatedly suturing the edges, and by parallel incisions in some instances, but if the cleft in the palate is very wide prognosis is not very hopeful. As these are deformities of arrested development, suitable hormone treatment should accompany the surgical treatment adopted.

Unfortunately, cleft palate usually occurs in those breeds of dogs which have a very flat palate. In human surgery it is found that the higher the palatine arch the better the prospect of successful surgical interference, as the soft palate can be dissected free and sutured in the median line, making use of parallel incisions to relieve tension if necessary. In performing this operation great care is needed to avoid wounding the lateral branches of the palatine artery. If the soft palate can be successfully closed the hard palate will unite in time. The attempt at closure by suturing should be made from behind forwards. The anterior position is easier to deal with and may be the subject of a second operation if necessary.

Hare-lip, uncomplicated by cleft palate, is practically always curable, although it may entail more than one operation.

The facial bones may call for surgical treatment in cases of crushing or smashing, and usually give a good response as they are easily accessible. Crushed bones may be elevated either by leverage *via* the nostril or by means of a screw trephine. In the dog the palatine bone may be split down the middle line by crushing from above. In this case the incisor teeth project outwards at an angle of 45° and the fracture can be easily detected as a projecting ridge along the palate from back to front. This is treated by means of an aluminium plate moulded to fit the palate, and having a hole at either side through which the incisor teeth are thrust. If this plate is carefully fitted to fill the space between the dental arcades it is easily retained in position.

Fractures of the mandible are not uncommon and in long-faced dogs rapidly respond to the treatment. One such case in a young borzoi was splinted with pitch plaster, and supported in a cradle made of a padded wire muzzle with a broad strap to buckle across the nose.

In the horse the teeth may be broken by a kick or a fall, whilst partial fracture of the mandible in hard pullers with splintering and detachment of a portion of the bone is not uncommon. One case which came under my notice had a fracture of the mandible through the symphysis and also through the right ramus in the interdental space, the result of a collision, the fractured half of the body lying loosely in the buccal membrane. This fracture was reduced by wiring. The incisor teeth were temporarily lashed to those in the sound side of the jaw with string, the buccal membranes injected with cocaine, and a hole bored through the fractured part of the body of the mandible and through the uninjured half with a twist drill. Through this a stout silver wire was passed, twisted tightly up, and the ends buried in between the incisor teeth to prevent scratching the lips. The string around the incisors was then replaced by soft flexible wire, and the animal kept on pillar reins and fed on soft food until union took place. This was complete and left no deformity.

The operation for entropion is too well known to need any description, but care in performing it is needed lest the opposite condition, ectropion, be set up. The amount of skin it is necessary to remove in the treatment of this affection is remarkably small, and the wounds usually heal by first intention.

Torn eyelids, especially upper eyelids, are not uncommon in the horse, and are easily treated by repeated suturing and restraint of the patient upon pillar reins until healed.

Displacement of the Harderian gland is frequently met with in canine patients, and no ill-effects seem to follow its extirpation, but the removal of the nictitating membrane I regard as a mutilation, and as bad surgery. When badly ulcerated I have frequently excised it in days gone by, but have always regretted doing so as the dog is never able to keep his eyes clean afterwards, and I have for years abandoned this operation for more rational treatment with antiseptic and astringent lotions.

Dermoid of the eyeball is occasionally met with in the dog. One such case came under my notice last winter. On the surface of the eyeball was a thick, flat, white patch, triangular in shape and about half an inch long, the base being firmly adherent to the sclerotic whilst the apex rested upon the corner. Under cocaine the apex was seized with fine rat-toothed forceps, and the growth carefully dissected free with a Bard-Parker Symes' knife. On the surface eleven long silky hairs could be counted with a hand lens. The operation is a delicate but not a difficult one, but the entire growth must be removed or it rapidly grows again. When removed the growth should be carefully examined with a lens to see that no hairs have been cut across leaving the root intact, as if this has happened the hair will grow bristly and cause irritation. The dermoids themselves, although unsightly and often covered with long silky hairs, cause little or no irritation of the eye.

Surgical Treatment of the Ear.

The ears in the dog come in for a good deal of surgical attention as they are often damaged in fights and from self-inflicted injuries. One of the first minor operations I ever performed in my pupilage was to stitch on, very carefully, the skin of a fox terrier's ear which had been almost completely stripped in a fight, everting it like a glove finger, and leaving it only attached at the tip. I turned it carefully back and stitched it into position with some silk and a milliner's needle, and felt hugely delighted

at my prowess. Just as I had finished, my principal came in and remarked, " Very pretty work, Mr. Wilkinson, but it is love's labour lost. It will never heal and you will have to crop him." Boylike, I felt so disappointed that I never looked at the dog again and left him in the kennels with his ear crusted with clotted blood. This apparent neglect was probably the treatment he needed, for he made a complete recovery.

Hæmatoma of the external ear is a condition frequently met with in dogs, and I have found a modification of the operation indicated by our respected President, Prof. Macqueen, uniformly successful. This consists of evacuating the hæmatoma by a longitudinal incision on the inner surface of the ear, cutting out a very small semi-lunar strip of cartilage to prevent too rapid healing and stitching the two plates of cartilage together by two rows of interrupted sutures, surrounding the wound and passing right through the ear from skin to skin. Where carefully performed there is no resultant deformity either by thickening or wrinkling, nor any interference with perfect ear carriage.

One occasionally meets with dogs whose external auditory meatus is completely blocked by polypi, the result of long standing otitis. This causes much discomfort, and a greater or less degree of deafness. Their removal is best effected by boldly slitting the ear down to its base between the edges of the conchal cartilage, carefully avoiding any injury to that organ. The ear can then be spread open, exposing all the growth for easy excision. After their removal the ear is plugged for twenty-four hours to control the hæmorrhage, which is often considerable, and bandages applied.

Healing is rapid and uneventful. The large gaping wound has generally closed just as soon as the wounds on the cartilage made by removal of the polypi have healed. Suturing is unnecessary.

Bandaging of the ear is most comfortably and effectively performed by means of cheese-cloth bandages, which are light, cool, and easily moulded to the configuration of the skull. They are maintained in position by cutting a window through each fold of the bandage as it passes over the sound ear, and drawing this member through the gaps thus made, and by a row of stitches down the scalp.

Wounds on the tip of the ear are often troublesome. Dressing with salicylic ointment to keep them soft and bandaging as described to prevent bruising against the skull or cheeks when the head is shaken, may effect a cure, but it is occasionally necessary to do a modified Cherry's operation before healing is obtained.

The " Roaring Operation."

No reference to plastic surgery in the horse would be complete which omitted mention of one of the most successful plastic operations of the day, that for the relief of roaring associated with the name of Professor Hobday.

From an extensive experience of this operation and its subjects, I am of opinion that the results justify all the praise which has been bestowed upon it. Prof. Hobday has operated upon several hunters for me, and I have ridden a great many more which have been submitted to this operation and in every instance, even in some horses which were utterly worthless unless operated upon or tubed, the animals have been rendered capable of severe work, whilst in some instances it has been quite impossible to detect any abnormal sound.

One horse so operated upon was so bad a roarer that he could not even canter without distress, whilst to gallop him was impossible. After operation he carried me to drag-hounds and foxhounds for four seasons, hunting with six packs of hounds in the season 1913-14. This horse, like many others which have undergone this operation, made no noise whatever when kept very fit. Moreover, unlike some others, he never grunted. I am of opinion that many of the adverse opinions expressed on this operation come from people who do not keep their horses fit enough, and I know one big hunter now, which makes no noise when fit, but if galloped when out of condition makes more noise than an ordinary bad roarer. Last spring he was condemned by one veterinary surgeon as a bad roarer, and the following week, after several good gallops, was passed by another practitioner as sound. I have often heard it stated that the infirmity recurs after a time. That has not been my experience, and I knew one horse which was hunted for twelve seasons after operation.

Tracheotomy.

Whilst dealing with this region I would like to make a few remarks upon tracheotomy. It seems to be a common practice when " tubing " a horse for a second time to avoid the original opening and make a fresh incision lower down. At a recent steeplechase meeting I saw no less than four runners who had been so treated. The insertion of a tube low down in the trachea is an unsightly procedure and, I venture to say, generally unnecessary and bad surgery.

I think it is generally accepted that the higher the tracheotomy wound is made the better the protection against the ingress of cold air on a bleak winter day, to say nothing of the protection afforded against clods of earth flung up by horses galloping in front of the tubed horse and the increased risk of drowning should a horse tubed low down fall into water. When a horse has once been tubed and the tube has been removed for several months there is usually some deformity of the healed trachea leading to a certain amount of obstruction, but this can always be overcome by careful surgery. Last autumn I tubed a hunter for the fifth year in succession, inserting the tube into the original wound. Certainly upon occasion one meets with crumpled and inturned tracheal rings and sometimes a lot of fibrous thickening between the trachea and the skin, but it can all be removed by careful dissection under a local anæsthetic, and the result of the operation is well worth the trouble involved. Personally, I have met with very little deformity following tracheotomy, and I attribute this to the fact that I very seldom take out a tracheotomy tube to clean it, being of opinion that much more irritation is occasioned by the frequent removal of the tube than by its actual presence in the trachea. If a metal plug is kept in the tube at all times, except when the horse is doing fast work, the tube does not get very soiled. Dust, dirt and hayseeds are excluded, and the horse is able to cough in the normal manner without filling the tube with mucus. As an instance of this, may I quote the case of a horse I tubed at Christmas, 1927 ?

Since that date, eighteen months ago, he has only had his tube taken out six times, and as he won a steeplechase

at Aldershot in the spring he does not seem much the worse for it. His owner used to carry a pill box in the ticket pocket of his hunting coat, and on arrival at the meet used to put the plug of the tube in this, replacing it to hack home after hunting.

There may be something in Mr. Livesey's remarks as to unsightly scars upon the withers and shoulders, after operation, and on one occasion I was able to remove two ugly seton scars by a modified Cherry's operation.

The regions of the chest, loins and buttocks may often afford scope for plastic operations, but they are generally of a simple character. Last summer a chow dog which had been badly scalded on the buttocks came under my notice, and I was able to remove an ugly bad scar by excision, undercutting the adjacent skin, making parallel incisions, sliding and suturing.

I have already made suggestions on one or two occasions for the insertion of sutures a second or third time after they have broken away, and provided the wound can be rendered sterile can see no objection to it, and do not hesitate to suture at any stage if I am of opinion that by so doing I can hasten the healing of wounds. I have been more than once criticised for so doing, but it seems to me good surgery to take every opportunity of approximating the edges of healthy wounds.

Posterior Fractures, etc.

Fractures of the iliac shaft, or of the ischium, in equine patients, usually respond to treatment by rest in slings and the application of a sharp blister or a charge to the gluteal region, provided the acetabulum is undamaged.

Pelvic fractures in canine patients are very common nowadays, the result of animals being run over by motor cars. One such cases which presented a fracture through the pubic symphysis and also of the shaft of the femur made a good recovery after being encased in a setting resembling a pair of breeches, brought over the loins and buttocks, and down the thighs, and secured by pitch and resin plaster. Owing to the pelvic fracture the feet kept slipping apart, like a dancer doing "the splits," and letting the patient fall upon his pubis. This tendency was overcome by attaching a string to each leg of his breeches and tying them together sufficiently short to prevent abduction of the limbs.

Some tips of tails in the big breeds of short-haired dogs such as boarhounds, mastiffs and pointers are often a source of trouble. In spite of the tenderness of the organ, the animal will persist in bruising it by banging against walls and doors. If this can be prevented spontaneous healing often takes place, and I have found the following simple procedure very effective: A spare room or a horse loose-box is commandeered, and a strong staple driven into each of the four corners about three feet above the ground. Two ropes are tied diagonally across the room to these staples and tied together where they cross. At this point, in the middle of the room, the dog is tied or chained to the crossed ropes by a short chain and collar, and a straw mattress placed for him to lie down on. He can then rest in comfort but cannot bang his tail against any of the walls. If the caudal vertebræ have become necrosed they must be excised and an artificial point to the tail made from the skin flaps to lessen the disfigurement.

The external genitals in both sexes occasionally require some surgical treatment. Vaginal stricture is very common in the bitch, but is usually easily dilated under cocaine, with the finger or with a glove stretcher. Occasionally a very dense fibrous band is met with, and in order to avoid tearing of its strands, which may lead to a recurrence on healing, an injection of fibrolysin, passed through the skin with a hypodermic syringe (so avoiding any wounding of the mucous membrane) will soften it in a few minutes so that it may be readily dilated. A similar injection is very useful in chronic phimosis in the male dog.

Prolapse of the vagina may be treated by excision of a portion of the floor. This operation was successful in the case of a retriever bitch with an old-standing vaginal prolapse, the organ being badly abraded and ulcerated. All attempts to retain it in position proving useless, I decided to excise a portion of it. Under cocaine the prolapsed portion was drawn well out with vulsellum forceps, and an elliptical piece of the floor of the vagina posterior to the meatus urinarius excised. The gap thus formed was closed by the insertion of a buried mattress suture of fine catgut, then by interrupted sutures of plaited silk and painted over with acriflavine solution. The viscus was well thrust forward into the pelvic cavity and an injection of morphia given to prevent straining. The operation was a complete success and during the year this bitch bred a good litter of puppies.

For the prevention of straining after reduction of prolapse both of the vagina and of the rectum the prolonged local anæsthesia produced by an injection of quinine and urea hydrochloride is very effective.

Technique of Cherry's Operation for Knee Scar.

Cherry's operation for the removal of the scar of broken knee is an extremely useful one. The animal should be well prepared for operation, as it entails a standing posture for at least three weeks. Slings are contra-indicated, owing to the tendency of the slung animal to flex his knees and so displace his bandages. This I found to be a matter of very great importance, as in one case, an extremely irritable patient who constantly displaced his bandages, this led to the formation of a vertical row of projecting bristly hairs which marred the effect of an otherwise successful operation.

The operation itself, whilst calling for the exercise of surgical care, is neither difficult nor dangerous. A narcotic should be given prior to anæsthesia, as it is essential that the patient should be kept very still during the operation, and the lines of incisions should be carefully marked out in indelible pencil, prior to casting, upon a knee which has been clipped and shaved on the previous day. The whole scar must be included in the ellipse of skin removed and the incisions should be at least three times the length of the vertical extent of the scar tissue. The lateral ribbons of skin which are undercut should not be too narrow, thus ensuring an efficient blood supply, and all hæmorrhage should be controlled before suturing the wound. The central incision is closed by interrupted sutures, commencing at the top of the wound, and most carefully approximating the edges of the skin so that no wrinkling follows. Any ill-fitting suture should be removed at once and carefully replaced.

When the operation has been completed, the knee should be lightly bandaged and the horse allowed to rise. After he has recovered the bandage should be removed, a piece of sterile gauze or boric lint steeped in glycerine applied to the wounds and gently drawn downwards a quarter of an inch, before being bandaged over. After completing the dressing of the knee, the legs should have applied clean stable bandages with a roll of cotton wool under them. This prevents the knee bandages slipping down and also, if applied at once, prevents gravitation swelling of the legs, a very important matter in these cases.

The dressings may be removed in twenty-four hours to make sure that all sutures are correctly placed and that there are no blood clots to interfere with healing. After that the dressings need not be removed for a week.

Bandages which fit snugly without slipping and which are not too hot nor too heavy should be used, and for this purpose cheese cloth is the best material.

The operation of cunean tenotomy is not often performed nowadays, but is sometimes very useful in the treatment of lameness from very large bone spavin. One veterinary surgeon of my acquaintance, who used to point-fire (it could not be called pin-firing, as the irons were very coarse) very deeply for spavin expressed the opinion that the success of this operation often depended upon the splitting open of the cunean tendon with the hot iron. Certainly I can recollect two hunters which had been both line-fired and pin-fired without any benefit, becoming workably sound after cunean tenotomy.

One of my friends has made a suggestion that I should refer to the occasional bad healing of firing wounds and the bad results of too severe blistering. This latter trouble, I am pleased to say, I have not met with since I took to preparing all my blistering ointment in a water bath to prevent overheating, and straining it through calico before cooling. Also I left off the use of any ointment or emollient to blistered surfaces, using white lotion instead as, rightly or wrongly, I had formed the opinion that oils and fats dissolved out some of the "fly" left in the skin, and set up fresh vesication. For years, however, I have seldom used cantharides, using the Chinese "fly," *Mylabris* instead. This produces copious vesication with less irritation than cantharides.

Bad healing with a breakdown of the skin and severe sloughing may follow too severe firing, but it will occasionally occur in spite of every care and skill. When that happens, as in the case of a valuable steeplechaser I was invited to see for a brother practitioner recently, it appears to be associated with a potassium deficiency in the injured tissues, and the best results are seen from treatment with potassium chloride in solution, applied as a lotion with a spray syringe.

The Digits.

Coming to the digits, one meets many accidents and defects, especially amongst hounds and running dogs. Whatever other tissues have to be excised, an effort should always be made to preserve the pad intact. One rather interesting case occurs to my mind. An old English sheepdog got trodden on by a horse and had the median phalanx of his fourth digit on the right paw smashed to bits. The proximal and distal phalanges were uninjured and the toe-nail intact. After thoroughly cleansing the foot and removing the broken fragments and their articular ends, the skin was drawn together, saving the pad and toe-nail. This wound healed by first intention, leaving no lameness, whilst the dog's heavy coat concealed any disfigurement.

A particularly useful operation is that of hoof-section for the relief of lameness arising from pressure upon the soft structures within. This operation I have performed very many times, and I think I can count the cases in which it has proved a failure, that is where no relief has followed it, upon the fingers of one hand.

The few failures have been due to faulty technique, causing wounding of the soft structures.

The operation itself is a very simple one consisting of the making of a few incisions in the hoof wall at the quarters or toes, as the case may be, to give relief from hoof-binding by allowing the wall to expand.

I use the old farriers' term "hoof-binding" to describe these cases advisedly, as in many instances there is no contraction. On the contrary, there is often a marked bulging, but it is generally accompanied by the formation of dense rings in the wall, sometimes of almost stony hardness, as one realises when sawing through them.

In the course of a paper I read before the Lancashire Veterinary Association last November, I referred to this operation at some length, and after the meeting Mr. Woods, of Wigan, asked me to write Sir Fred. Smith on the subject as he felt sure Sir Fred. would be pleased at this reference to an old favourite operation of his own. I received a most charming letter of reply from Sir Fred. Smith, in the course of which he said: "You are perfectly safe in performing hoof-section, and in recommending it to others. It has been well tested, but perhaps you can hit on some instrument which will render the operation less laborious. This holds it back, for if not thoroughly performed it is useless."

The saw which I had made to my own design some sixteen years ago seems to fulfil this requirement, as I do not find the operation very laborious when using that instrument.

During the past few months I have operated upon a large number of horses' feet, all the animals having now returned to work. On November 15th last, with Professor Hobday's permission, I operated upon a heavy coal vanner in the College at Camden Town. This mare had been lame a month and had developed a bulging of the hoof wall at the toe. I attributed her lameness to pressure upon some enlargement of the pedal bone. The foot was incised at the toe, making three incisions from coronet to sole, deep enough to enter the white line. In three days she was sound, and has been in constant work ever since. A week later measurement with a string around the hoof revealed an expansion of three-quarters of an inch.

On November 19th I operated upon a roan cart gelding which had been lame for two years. The owner told me this horse had his coronet crushed two years ago and his veterinary surgeon took out several pieces of broken bone. When the wound healed he was turned out and had been unworkably lame ever since. He had a large sidebone on the outside of the near forefoot and a bulging hoof below it. After incising the hoof wall in six or seven places, the horse was shod and a few days later put to work on the land. He has since become quite sound.

After the prolonged frost broke up I had quite a lot of hunters come out dead lame. These horses had probably been affected by contracted feet for some time, but kept hunting sound so long as they were doing plenty of work.

One client of mine had three hunters out of nine come out as lame as if suffering from suppurating corns. All these horses went hunting in a week after hoof section had been performed and worked themselves sound. Another hunter, very lame from contracted foot, was operated upon on March 27th, and ran third in a heavy weight point-to-point on April 6th, following this up by leading his field for three miles in a regimental steeplechase ten days later. Still another hunter was operated upon on December 31st last and afterwards carried a fourteen-stone man to hounds whenever the frost permitted. This mare had been lame eight months, and was supposed to have ringbone and navicular disease, and I was asked to fire her as she was unworkably lame. Her quarters were contracted and she had a peculiar marked bulging of the wall at the toe. Nine incisions were made into the wall, three at the toe and three at each quarter.

As I was pulling my saw away, a few minutes after making these incisions, the farrier drew my attention to to the expansion which had already taken place in the middle incision at the toe, and I was able to put the blade of the saw into it and waggle it freely about.

Sir Fred. Smith said in his letter that he thought he had been the first to draw attention to rest as a cause of navicular disease, but that he was engaged upon a history of the profession in the nineteenth century, and finds that Mr. James Turner, the discoverer of navicular disease, was the first to assign rest as a cause.

I wonder how many horses suffering from hoof-binding are condemned as being affected by navicular disease and have often wondered whether this condition might not sometimes be a cause of that trouble.

Another most valuable operation to which only passing reference is made in any text-book I have seen, is that of plugging the hoof for sandcrack. A saw-cut is made down the wall at each side of the sandcrack, and a groove cut between the saw-cuts which admits of the insertion of a dove-tailed wooden plug which holds the edges of the sandcrack apart. The relief of pain is almost instant and after stimulant treatment of the corner, the wall grows down stronger and wider than before the sandcrack had formed. This is a very laborious and tedious operation, which probably accounts for it being so seldom performed, but in the case of very severe lameness in heavy horses arising from sandcrack it is far superior to any other method of treatment, and well repays the time and labour spent upon it.

Discussion.

Major Hamilton Kirk: By way of "opening the ball," I would like to thank Mr. Wilkinson for a very practical and interesting paper.

He has raised several points in connection with canine practice which are of interest to me, particularly the one in which he mentioned the splitting of the ear for the removal of polypi. I do not quite understand how Mr. Wilkinson did that. I have had several cases of dogs' ears practically closed up by growths, but I did not split them. I dissected out the growths piece by piece, but in about six months' time the patient would be back with a fresh crop, which would be removed a second time. In fact, they kept on recurring and eventually the dogs had to be destroyed. I would be glad if Mr. Wilkinson would explain a little more explicitly what he did with the ears thus affected.

He mentioned dogs' tails being difficult to heal owing to being continually knocked against the walls. Greyhounds are a great nuisance in that respect; I have to remove an ulcerated tail-tip from a greyhound to-morrow morning, a tail which has been in constant trouble for two and a half months and could not be made to heal.

Mr. Wilkinson advocates tying the dog in the middle of the room, but that does not prevent the dog from biting the tail or knocking it against the floor, and it is sometimes very difficult to keep an Elizabethan collar in position for a long time. The problem is a very difficult one, and I have been trying to devise something as a covering for the greyhound tail, the idea being an appliance to encase the whole tail, and capable of being opened and closed by means of that new device that is used on ladies' boots and handbags, to facilitate daily dressing. Greyhound trainers will tell you that if anyone can devise anything for the prevention of injuries to the tip of the tail, it would be in great demand.

Mr. Wilkinson mentioned pelvic fracture. My own method of dealing with that has always been, and still is, the application of plaster of Paris bandages continued right down both hind legs to the feet, enclosing the whole of the loins and hind quarters of the dog completely and rigidly. Of course provision is made for the penis and anus. That is a perfectly good method. You lay the dog down if he wants to sleep and stand him up when he wants to feed, etc. (Laughter.) If you only half do it, there is movement, with pain, and perhaps resultant deformity to some degree, and I have always been an advocate of strict rigidity in the treatment of this condition.

Mr. J. Willett: I also should like to thank Mr. Wilkinson for his very valuable paper, the latter part of which appeals to me the more, especially in reference to hoof splitting. I have done a considerable amount of it during the last twenty years in different parts of the country, and I can say that it has been uniformly successful. I am sure that there are many horses that have been condemned as suffering from navicular disease in which the lameness is only due to pressure on the sensitive structures on the inside of the wall. I do a number of horses every year.

I was most interested, too, in his use of the wooden plug in the treatment of sandcrack. In the days when I used to do more heavy horse practice than I do now, I employed that method very frequently, for I was greatly in favour of it. Although it was a lot of trouble, the trouble was well worth while.

Lieut.-Col. W. A. Pallin: I should like to congratulate Mr. Wilkinson on his really excellent paper. I think it is one of the most practical and useful papers we have had read before the Society for many a long day. (Applause.)

Mr. W. Perryman: I should not like this meeting to go by without a liberal discussion of Mr. Wilkinson's able paper. There were a few things in it about which I should like to know a little more.

Two or three times Mr. Wilkinson used the expression "undercutting," and I could not quite make out what he meant by that. Does he mean that when granulation has taken place to a certain extent the skin appears to double in, and that he dissects the skin back again and so prevents unsightly scar formation? I quite agree that is a very useful procedure. I am surprised that Mr. Wilkinson did not mention that wounds in certain localities, such as the neck and shoulder, have a tendency to grow inward, especially deep muscle wounds. In these cases by dissecting the skin back and retarding the healing process in the skin while the underlying tissues are undergoing repair, you will get the edges of the wound into much better apposition.

In reference to the healing of the knees, of course in valuable animals scar tissue is more of an eyesore, but in London working horses we don't mind a scar. But there is a condition of the knees with which we meet, where you get a big transverse wound across the front of the knee.

It is one of the most difficult wounds to heal. It will fill up, but as soon as the horse begins to move it will break right open again. In the treatment of this condition I now make a crucial incision, and with some measure of success.

Concerning eye wounds, there are no wounds which can be hailed with greater delight by the veterinary surgeon, for of all the parts of the body the eye-lid is the readiest to heal. If the wound is a little stale, freshen it before suturing; apply a little dry dressing and it is seldom that any more treatment is required.

Years ago, I remember, I received a wire "Come at once," and thinking the case might be one of colic I laid hold of every conceivably-useful drug and set off. When I got there the trouble was an eye wound, for dealing with which I had made no provision. I borrowed a darning needle and with some thick thread I stitched the eyelid in place and in a week it was healed. That exemplifies the healing power of the eyelids, and is typical of the progress of eye-lid wounds. As to hoof binding, I do not look upon that as a special disease, but as due to some injured tissue being inflamed. I tried splitting the hoof some years ago with a saw, but I put the poor brute to such agony that I resolved never to do it again. I think that the unbinding of the hoof which results from firing, is the essence of firing a sidebone. I make a point of going through the coronary band every alternate line; in course of time you will find that the resultant expansion will extend downwards and give permanent relief. In examining a side-boned hoof on *post-mortem* one is surprised at the amount of fibrous tissue which is present.

I thank Mr. Wilkinson for his contribution.

Professor G. H. WOOLDRIDGE, when called on by the President, said: I do not wish to presume to discuss this paper at this hour, and in view of the fact that the number of members now present is so small, for there is such an enormous amount of material for discussion. It is really an excellent paper and it gives us much food for a full subsequent discussion, and I do not think it is fair to Mr. Wilkinson that we should attempt to discuss it in the time at our disposal. I feel that the discussion should be adjourned to another occasion. (Hear, hear.)

The PRESIDENT: I am sure that Professor Wooldridge's suggestion is one that will commend itself to all of us, but we have a distinguished visitor here in Professor Stewart, of New South Wales, whom we are particularly glad to welcome, and whom we shall be very glad to hear. (Applause.)

Professor J. D. STEWART (of Sydney University Veterinary School): May I, in the first place, express my pleasure at being here at a meeting of the Central Veterinary Society. I had anticipated a larger gathering, and must confess that this evening you are numerically just as strong as we usually are at our monthly gatherings at Sydney.

It has been a further pleasure to me to listen to Mr. Wilkinson's address. He has certainly covered a very wide field and has given expression to some valuable thought. There is one matter I think he might have stressed with benefit, and that is the necessity for a careful selection of cases on which to apply the various methods of treatment he has referred to. Unless that is practised it seems to me that the operative procedures will not be attended by the degree of success he would lead us to expect. In cunean tenotomy, for instance, there must be a very careful selection exercised.

Another matter to which I should like to refer is Mr. Wilkinson's statement of indolent healing of a wound appearing to be associated with a potassium deficiency in the injured tissues and his treatment of spraying the part with potassium chloride in solution. It would be interesting to know how the diagnosis of potassium deficiency was arrived at, and it is suggested that the administration of a potassium salt internally would be more efficient in combating a constitutional deficiency if such existed than the spraying of a solution of one on the affected part.

I have recently enjoyed a tour of the continental veterinary schools, and have been impressed by their material advancement in veterinary surgery: most of these schools have well-constructed and well-equipped operating theatres and possess all the accessories necessary for successful surgery. All the big schools have an X-ray outfit; in fact, some have more than the one X-ray room. The result is that the work they are doing there is of high class. It is very necessary for us also to maintain a high standard in surgery, because so long as we hang on to the designation "veterinary surgeon," the public naturally expect us to be efficient surgeons. In Sydney we have always endeavoured to do so. We have a very serviceable operating theatre, with an electrically-controlled table for large animals and others for small animals. In addition there is a throwing green where animals are cast and secured after the methods of the country practitioner, an item of tuition which I hold to be necessary in training the veterinary student. Another excellent exercise for students—and its value has been exemplified this evening by Mr. Perryman in relating his experience in an eye-lid suturing case—is to make them note, before an operation, all the instruments which are required as well as those likely to be required in the event of unforeseen developments. This is undoubtedly very useful training for country practitioners, who frequently have to operate far from their supply base.

Mr. Wilkinson's address has been very interesting and I am sure it will, in publication, act as a stimulus to all who read it.

Professor J. MCCUNN: I, like Professor Wooldridge, think that the paper before us is altogether too wide in its range and interest to allow of its adequate discussion this evening.

I may say now, however, that there are one or two things in it with which I disagree. The first concerns the papillomatous condition of the dog's ear. Recently I have seen a number of cases operated upon by means of the cautery, and the success of these cases has been really wonderful. The ordinary cautery will not entirely remove large growths, but if one gets rid of these with a knife and then uses the cautery, I think that this method had a great advantage over other forms of treatment.

The tail condition is a serious one, particularly in greyhounds; I have known them lose as much as half a pint of blood in a day, which is a serious thing for a dog in training. How to combat the condition is a problem, for in the greyhound the tail would seem to be composed of nothing but skin, bone and bloodvessels. There is one way in which I have been able to help matters—and I adopted it on the suggestion of an old farmer—and that is to get an eel; take the skin off complete, dry it, open it, turn it inside out, and it makes a lovely tail stall for a greyhound.

Another point in which I disagree with Mr. Wilkinson is his advocacy of the retention of the membrana nictitans: I cannot see why it should not be removed, for it is a useless appendage and in those cases in which I have removed it I have never had any trouble with the eye afterwards in regard to persistent discharge. In some cases you will get a little extra discharge for a week or so, but as the eye regains its normal bulk and comes further forward as the irritation is removed, it proceeds completely to fill the orbital cavity and the dog is as good as ever.

I would like to ask Mr. Wilkinson how he removes the Harderian gland without interfering with the membrana nictitans.

As regards fractured pelvis, I see many cases, especially in dogs, but in both horses and dogs I do not think you need do anything further than keep the animal at rest. In the horse all you have to do is to put him in slings; in the dog, confine him in a small box. I have seen many cases of fractured pelvis in which absolute distortion has been caused by the application of all sorts of plasters.

Mr. Wilkinson's treatment of sandcrack is very good, though, as he says, it is laborious, and to my mind you should always try a simple form of treatment in preference. That which I have adopted for a considerable time is clamping the sandcrack with an ordinary farrier's nail. Put the nail through, clench it, and apply a little blister at the coronet to promote the growth of the hoof.

I must congratulate Mr. Wilkinson on his paper; there s no doubt that it will well repay on reading when it appears in the *Record*.

Mr. J. WILLETT: As time is getting on, and Mr. Wilkinson's paper is one of such great interest and, moreover, there are so few people here to discuss it, I beg to move that the discussion be adjourned to a convenient meeting.

Professor WOOLDRIDGE seconded the motion, which was carried unanimously.

The PRESIDENT (Professor James Macqueen): I ought to take this opportunity of congratulating Mr. Wilkinson on a very excellent paper. At the same time, in many respects I do not agree with him at all, and if time had allowed I should have been pleased to have shown him wherein his reasoning is not very well founded. I shall defer that until the next occasion, when we hope to have had an opportunity of reading the paper.

Meanwhile, I think we all have to thank Mr. Wilkinson for the very extensive ground he has covered and the excellent way he has filled in the particulars. But I should not have named his paper as he has done; I should have said it was a paper on surgical technique, for that is really what it is. But the substance is there, and that is all that really matters.

CLINICAL AND CASE REPORTS.

Some Cases of Colic in Horses.

By ERNEST WILKINSON, M.R.C.V.S., Witney, Oxon.

CASE 1. *Subject.*—Bay cart horse, 11 years, excellent condition.

Symptoms.—Colicky pains, not very violent; slight sweating; respirations accelerated; no peristaltic sounds.

Diagnosis.—Bowel atony.

Prognosis.—Fairly favourable.

Treatment.—Colic drink containing chlorodyne, aloes and terebinth; 4-dram physic ball and three balls containing ammon. carb. ℥iv and pulv. nucis vom. ℥ii.

Seen later on the same day, horse showed no sign of pain but appeared dull and no dung had been passed. Hypodermic of arecolin given: this produced profuse salivation and some pain, but no other result. Copious soapy water enemata given without result. Another ammon. carb. ball was given and then repeated every two hours.

Second day.—Horse dull, no evacuation of fæces and no peristaltic sounds. Stimulating medicine and enemata continued.

Third day.—Still no motion of the bowels. Arecolin (gr. i) given, with result similar to first dose.

Fourth day.—Horse now excessively dull; it had not eaten anything from the first day of illness and there had been no bowel movement. Conjunctiva was a dirty grey colour; pulse almost imperceptible; respirations shallow and accelerated. Three tablets, each containing physostigmini sal. (¼ gr.), pilocarpini hydroch. (½ gr.), and strychnini sulph. (⅛ gr.), were given. No result, except to repromote salivation. Continued stimulating treatment.

Fifth day.—Horse still showed little sign of abdominal pain, but very great depression was evident and it was with difficulty that the animal could be moved across the box. The horse was now very weak and a push with the hand almost threw it down. There had now been no evacuation of fæces for five days. I gave 4½ gr. of arecolin hypodermically. Salivation commenced in three minutes, and peristaltic sounds in five minutes. In ten minutes a small amount of dung was passed. The horse was now in considerable pain and sweating.

After fifteen minutes a large stool of pultaceous fæces was passed and again a large stool five minutes later. Passage of dung continued at intervals of a few minutes for one and a half hours, after which the bowels became normal and the horse made an uneventful recovery.

This horse worked regularly for two and a half years without any attack of colic and then died after a 36-hour violent illness from a very complete twist of the small intestine.

CASE 2. *Subject.*—Pony, 10 years old, and very fat.

History.—Had been at grass for several months. Brought in and did a heavy day's work on the side rake in the hay field. Was later noticed to be ill.

Symptoms.—Dull and drowsy and had passed only very small amounts of soft fæces. No peristaltic sounds.

Diagnosis.—Bowel atony.

Treatment.—Much the same as for the above-mentioned horse, but did not improve. On my second visit 1 gr. of arecolin was given and bowel stimulation continued with ammon. carb., etc. Arecolin caused slight salivation, but no pain or sweating.

This pony was stabled a long distance from my surgery and I did not see him alive again, but was told that he died quietly 36 hours after he was first noticed ill.

Post-mortem.—A very complete twist of the small intestine, with the usual large areas of intense inflammation, was found.

This pony showed practically none of the classical signs of abdominal pain from the beginning of his illness to his death. He stood dully in his box, hanging his head and apparently almost asleep. He lay down drowsing part of the time, but never attempted to roll.

CASE 3. Two horses were taken ill, at the same time, with colic. One horse recovered in two or three hours and showed no departure from the ordinary colic cases one sees. The cause of the two horses having colic was thought to be that they had been brought off wet pasture a few days before and put straight on to hay and oats and bean cavings, in which was a considerable number of mouldy beans which the thresher had failed to remove.

Diagnosis.—Acute indigestion, caused by unsuitable food and sudden change in diet.

Treatment.—Much the same as in the two cases previously described. After 24 hours, the horse which did not recover quickly was *in extremis*.

The mare showed intense pain and was swaying and staggering about the box as though in an advanced stage of alcoholism. She was sweating profusely and respirations were much accelerated. The conjunctiva in this case showed no alteration from the normal and no abnormality could be detected *per rectum*.

I expressed the opinion that the mare's condition was hopeless. I expected her every minute to fall down and die, although I was at a loss to account for the intense pain and excessive weakness, considering the healthy appearance of the eye and that there was no displacement backwards or ballooning of the gut.

I suggested a second opinion and a well-known practitioner saw the mare with me.

Two ounces of chloral hydrate were given with difficulty and in twenty minutes the mare appeared much better. She stood steadily on her legs, shook herself and began to dry off. At that time she looked like recovering, but the owner informed me next morning that she had died following a recurrence of violent pain.

Post-mortem.—I made a very careful *post-mortem* and, much to my surprise, I could find no naked eye abnormality of any kind beyond a very slight pink coloration of a few feet of small intestine.

Camel Castration by the Burdizzo Method.

By J. MULLANY, Major R.A.V.C., Secunderabad, India.

The enclosed photographs of camel castration by the Burdizzo instrument may interest your readers. Castration of a camel by this method takes 12 minutes, as follows :—

Casting and securing with ropes, 1 minute.

Chloroform anæsthesia, 5 minutes.

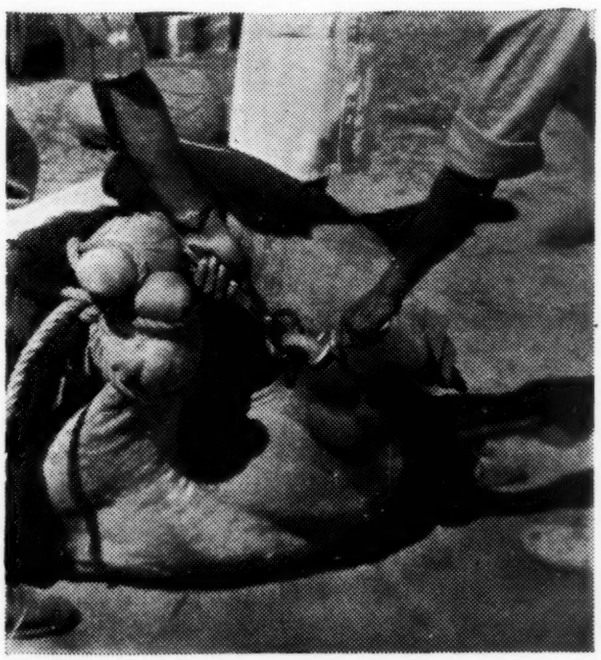
Surgical manipulations, 6 minutes.

I was quartered at Rawalpindi in 1927, and supervised the castration of the 100 camels mentioned by Lieut.-Colonel J. J. B. Tapley, D.S.O., R.A.V.C., in your issue of 30th March, 1929, page 278.

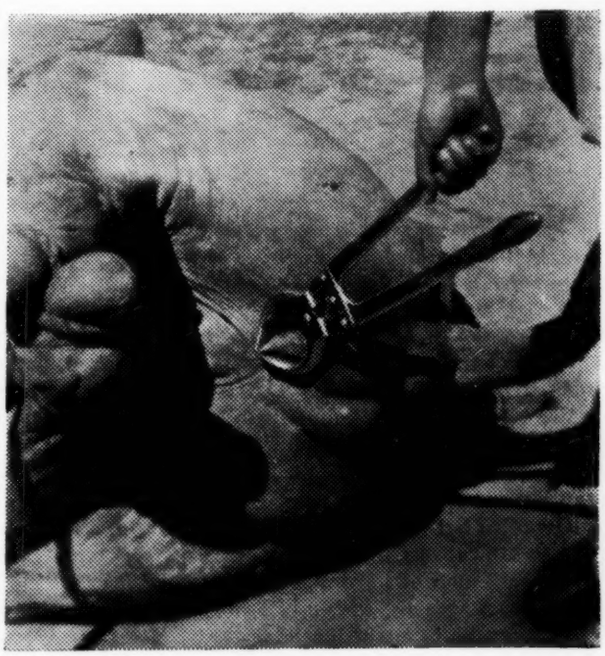
The photographs, which are self explanatory, were taken by an Indian photographer. I think he showed considerable skill in displaying the four stages in this method of castrating a camel.

First Step—Grasping the Cord.

Third Step—Instrument in Position.



Second Step—Cord held by Pincers.



Fourth Step—Instrument Closed.

The Zurich Congress of the Royal Institute of Public Health.

(CONTRIBUTED.)

The Annual Congress of the Royal Institute of Public Health, which was held at Zurich during Whitsuntide, under the Presidency of Lord Meston of Agra and Dunnottar, was of more than usual interest to the veterinary profession in that, included in the seven sections of the Congress dealing with the various aspects of Public Health work, was one for Veterinary Medicine and Meat Hygiene. This was the first occasion upon which such a section had been incorporated in the Congress and the Presidents were Prof. W. Frei, Vet. Med. D., Director of the Veterinary Pathological Institute of the University at Zurich, and Prof. J. Share Jones, Director of Veterinary Studies, Liverpool University.

On Wednesday morning, May 15th, the delegates assembled in the Aula of the University, and the Congress was officially welcomed by representatives of the Swiss Confederation, the Canton of Zurich, and the University. Addresses were also delivered by representatives from France, Germany, Norway and Italy, and honours were bestowed upon officials of the Institute by the University authorities. Lord Meston then delivered a highly interesting inaugural address on "Health and Civilisation."

In the afternoon visits to centres of interest in the city had been arranged and the members of the Veterinary Section were conveyed by motor cars to the public abattoirs. The party was met there by the veterinarian in charge, who conducted the members through the building and explained the system in vogue.

A Reception at the Dolder Grand Hotel, situated high above the city, was held in the evening and here the visitors were enabled to make the acquaintance of their Swiss confrères. A feature of the evening was the singing of a choir of male voices drawn from the citizens of Zurich.

On Thursday morning, at 9, the sections commenced their sittings. Prof. Frei delivered his presidential address on "The Rôle of Veterinary Science in Public Health" to a well-attended gathering. There were representatives from many European countries other than Switzerland, including Prof. Uhlenhuth from Freiburg, Sir Arnold Theiler (now residing at Basle), together with Mr. T. Eaton Jones (Liverpool), Mr. Hugh Begg (Lanark), Dr. Gerald Leighton (Edinburgh), Mr. J. Howard Jones (Glamorgan), Lieut.-Col. T. Dunlop Young (London), all Vice-Presidents of the Section, Dr. Andrew Rutherford (Edinburgh) and Mr. H. V. Hughes (Liverpool), who was the British Secretary of the Section. Professor Frei outlined the course which veterinary science should pursue in its relationship to public health, and dealt with his subject under three heads, *viz.*, The work of the Universities and Veterinary High Schools in educating the veterinarian and in developing research facilities; 2, The work of the qualified practitioner in the prevention and treatment of disease and in educating the population to a realisation of its responsibilities in connection with the care of animals, and, 3, The maintenance of a State Veterinary Service with necessary legislative measures to prevent the transmission of disease from domestic animals to other domestic animals, from wild animals to domestic animals and from domestic animals to man.

THE DISCUSSIONS.

Following Prof. Frei's address, a discussion on "Food Poisoning" was opened by Dr. Gerald Leighton, Chief Foods Inspector, Ministry of Health for Scotland. Dr. Leighton, after enumerating the three main causes of food poisoning—by chemical poisons, by poisonous plants and by bacterial infections—confined himself to the last variety and dwelt upon the subject from different viewpoints. He emphasised the need for reform in nomenclature of outbreaks of epidemics of so-called ptomaine or food poisoning. These, he insisted, ought not to be described in this way, for it was not the food which was poisonous but the bacterial toxins in the food. They were rather cases of food infection.

The discussion was continued by Dr. Andrew Rutherford, of Edinburgh, who confined his remarks to the bacterial causes of food infections in the human subject and noted the symptoms, clinical diagnosis and treatment of the more common varieties.

Dr. Zwicky, Professor of Veterinary Zootechny, Zurich, and Prof. O. Bürgi, Director of the Veterinary Surgical Clinic of Zurich University, then followed with papers, in German, on food intoxication in animals and food intoxication in horses respectively. Prof. Zwicky gave an account of the general causes of food intoxication in animals, together with a resumé of the effects of the commoner poisons on animals and the symptoms and treatment; Prof. Burgi, whilst mentioning bacterial poisoning, botulism, poisoning by moulds, etc., gave a full account of taxus poisoning as seen in the Canton of Zurich.

The discussion was then left open to the meeting and Sir Arnold Theiler, Mr. Eaton Jones, Mr. Howard Jones, and Mr. Hugh Begg spoke briefly on the subject.

At the Thursday afternoon session three contributions were read. Prof. Burgi, Director of the Swiss Federal Veterinary Department, Berne, presented an informing and detailed account of the work of the Government department of which he is head. The lecture, which was illustrated by a number of lantern slides, showed the development of legislation in connection with infectious diseases, and comments were made on the characteristic features of the legislation. Non-scheduled contagious diseases, *e.g.*, tuberculosis and contagious abortion, were dealt with, the need for compulsory notification of infectious disease in Switzerland was clearly shown, and the control of traffic, methods of disinfecting and vaccination were described. The organisation of the veterinary police service and the researches being conducted in connection with infectious diseases were also explained.

Professor Krupski's paper on the system of meat inspection, delivered in German, was short but instructive. It was interesting to hear that meat inspection is obligatory in Switzerland and heavy penalties are inflicted for infringements of the law. Many communities have public slaughterhouses where the inspection is, as far as possible, carried out by a veterinarian. Inspection of all imported meat is carried on at the frontier.

The last contribution to the sitting was a paper by Lieut.-Col. Young, Chief Meat Inspector, City of London, on "The Production, Preparation and Inspection of Imported

Meat." Col. Young traced the history of the dead meat trade from the time of the arrival of the first consignment of chilled meat in 1874 up to the present day, showing by statistics the enormous growth of the industry. The features of the methods of choice, production, transportation aud slaughter of the animals in the distant countries were described. The system of inspection of the carcases, both in the foreign country and in Britain, was also explained, together with the methods of sea transport. The paper was illustrated by over one hundred lantern slides, which added to the interest of this excellent contribution.

In the evening a banquet was held at the Hotel Baur au Lac, when, after the Loyal Toasts had been submitted, the toasts of the Hosts of the Congress, the Guests, the Municipal Representatives, the Women Members and the Institute were honoured. Amongst the British members who spoke at the function were Sir Robert Jones, Sir Thomas Oliver, Prof. W. James Wilson, Sir Ernest Lamb, Sir William Thompson, Miss Jean Howard and Col. Sir William R. Smith. The banquet was followed by a lantern lecture by the Swiss airman, Mittelhauser, who presented a remarkable collection of views illustrating his flight over the Alps.

Friday's session was to have been presided over by Prof. J. Share Jones, Liverpool, President of the Royal College of Veterinary Surgeons, but Mr. Hughes announced that he had received word from Dr. Share Jones expressing his sincere regret that events in England made it impossible for him to attend, although he had hoped to get over to Zurich, if only for a day or two. His address on "The Domestic Animals as a National Asset" was taken as read, owing to the limited amount of time at the disposal of the meeting. Lieut.-Col. Young presided in his stead.

In his paper Professor Share Jones showed by means of figures the dependence of Britain upon other countries for its essential food supplies, especially those derived from animals. And this in spite of the fact that the country was the best live-stock producing country in the world. He dealt with the hindrances to success in animal husbandry, such as the huge risk borne alone by the farmer, the failure to utilise sufficiently the by-products of the industry, etc., and then suggested a number of measures which were essential to success. These included a national system of insurance of animals, reform in the legislation dealing with animals, and education of the public to the value of home-produced foodstuffs, with better means of transport as between producer and consumer.

Mr. H. V. Hughes read the paper of Dr. Magee, of the Rowett Institute, Aberdeen, on "Some Effects of Heat on the Nutritive Properties of Milk," in the unavoidable absence of Dr. Magee. The paper was illustrated by lantern slides, and emphasised the deleterious effects of heat upon the calcium and iodine content of milk.

Continuing the consideration of milk, Prof. Kenwood, London, opened a discussion on "Cows' Milk and the National Health." He described briefly the activities of the National Milk Publicity Council and demonstrated the good effects produced in growing school children by the consumption of milk. He commended the idea as one which would prove to be of great national service.

Dr. Gerald Leighton read a joint communication of his own with Dr. J. Boyd Orr, of the Rowett Research Institute, Aberdeen, entitled "The Scottish Milk Feeding Investigations in Schools." This was a presentation of the result of two years' investigation of the effects of different varieties of milk—whole and separated—or its equivalent calorific value in biscuit, on school children who were fed upon these foods. Results showed that the extra ration of milk—even separated milk—produced a marked improvement in health, height and weight. The importance of the value of separated milk was emphasised.

"Tuberculous Bovines and Tuberculous Milk."

Lieut.-Col. Brittlebank, Chief Veterinary Officer, Manchester Corporation, who was to have read a paper on "Tuberculous Bovines and Tuberculous Milk," was prevented through official duties at home from attending the Congress and his paper was read by Lieut.-Col. Young. Col. Brittlebank spoke of the very serious difficulties which were encountered in combating tuberculosis in dairy cattle and discouraged the idea that the disease in Britain could be speedily eliminated by any drastic measures. He also stated that, in his opinion, the general agricultural public are attaching too great importance to the use of tuberculin. In attacking the problem, he recommended a policy of reconstruction of farm buildings and regular disinfection of cow-houses. But most essential of all he considered to be the institution of a systematic inspection of all dairy stock by veterinary surgeons.

The discussion upon Col. Brittlebank's paper was continued by Mr. J. Howard Jones, Glamorgan, who said that he thought the important item in the meantime was that every milking cow should be periodically examined by a qualified veterinary surgeon. From his personal experience, he found that owners and milkmen never, or at least very rarely, recognised tuberculosis of the udder to be what it is, even when in its most advanced form. He himself had found, in the short period of the first four months of this year, eight cows in his area of Glamorgan to be visibly affected with this form of the disease, and these discoveries were not the result of any routine inspection. Each of these cows had not only produced tuberculous milk, but had infected all the other milks to which hers had been added. This occurred in a county in which the incidence of bovine tuberculosis was smaller than in many other counties he could mention and, incidentally, this county, Glamorgan, was the only county in Wales employing a whole-time county veterinary officer. The Tuberculosis Order of 1925 was, in his opinion, insufficient to assist very much in the eradication of bovine tuberculosis. The routine inspection of all dairy cows by veterinary inspectors was an absolute necessity to the safeguarding of public health.

Mr. Hugh Begg, Lanark, then stated that under the Milk and Dairies Act such inspection was provided for, and each local authority was empowered to conduct a routine inspection—as, indeed, was being done in the County of Lanark. But he admitted that under that Act the necessary inspection was permissible, but not obligatory.

Mr. T. Eaton Jones, Liverpool, also stressed the necessity for the periodical inspection of milch cows by qualified

veterinary surgeons. In many country districts in England this was not being performed, though many of the larger towns were more progressive and whole-time or part-time veterinary officers were being appointed. When this became the rule and cows were kept under proper hygienic conditions the percentage of tuberculous animals would undoubtedly be reduced. The public should be educated to the food value of milk and to the necessity of that food being pure.

Prof. Frei said that the high incidence of tuberculosis among dairy cattle was acknowledged in many countries, but it was not due to any natural law. In Switzerland and in many other parts of the continent dairy cows were often kept in buildings and fed like any other cattle, notwithstanding the comparatively great output of substances by the udder. Observations had proved that the cow could produce 4-6000 kilogrammes of milk during one lactation period without disturbing her health and without being infected with tuberculosis, provided that she was kept in a well-built and properly-ventilated cowshed, and had an opportunity to spend much time in the open air, and that she obtained a food exactly adapted to the production of milk.

In the afternoon the members heard three papers read. That of Dr. H. Baer, Chief Veterinary Officer for the Canton of Zurich, was read in German and dealt with "Immunisation against Tuberculosis in Bovines with B.C.G. and Friedmann Vaccines." The experiments were commenced in 1924 and although the author could not pass a definite opinion, owing to insufficient *post-mortem* examinations having been made, he considered that the Friedmann vaccine appeared to have no therapeutic nor protective effect, and that the B.C.G. vaccine seemed to give a certain increase in resistance against infection after two or three vaccinations.

Prof. Dürst, Head of the Department of Zootechny, University of Berne, held his audience interested for over an hour as he discoursed in English on "Individuality and Constitution in the Relationship to Pathological Disposition." A number of lantern slides was screened to illustrate his remarks. His points were that two types of conformation occur in animals—respiratory and digestive. Individual variation is not so great in breeds selected for one purpose only as it is in dual-purpose animals. The respiratory type inclines to diseases of the chest, *e.g.*, tuberculosis, whilst the digestive type is more prone to diseases of the alimentary and circulatory systems. The dual purpose type suffers from both dispositions. The male inclines more to the digestive and the female to the respiratory type, but the breed plays no predominant part in comparison with the constitutional conformation type. When the endocrine glands are affected an intermediate type may be produced.

The session was brought to a close by a highly-entertaining contribution on "The Association of Protozoa in connection with Abortion in Cattle," by Dr. Riedmuller. Dr. Riedmuller is the Chief Assistant at the Veterinary Institute of Pathology at Zurich and he was the Swiss Secretary of the section. The protozoa described were a variety of Trichomonad which had been found in the serous fluids and heart of fœtuses. Cultivation had been possible only on Andrews' media. Inoculation experiments on guinea-pigs and rabbits were followed by abortion, which suggests that the protozoa may have some pathogenic significance. The paper was made more interesting by the illustration of the trichomonads on the screen by means of a cinematograph film. Bacteria of numerous varieties were also exhibited in motion.

In the evening a trip on the Lake of Zurich was arranged. The steamer took the party about six miles up the lake to Männerdorf, where dinner was served.

Saturday was given up to sight-seeing, and a party visited the famous Rheinfelden, where they were conducted through the Baths and entertained to tea by the proprietors.

On Sunday morning a service conducted at the Grossmünster—held for the first time in English—was attended by the Congress delegates. Owing to the rain, the procession through the city had to be cancelled, but those participating in the service wore their academic gowns and presented a picturesque spectacle in the fine cathedral of grey stone.

A tour of Schaffhausen in the afternoon terminated a very pleasant Congress, which was undoubtedly a success in every way. The most grateful thanks of the British delegates are due to the Swiss friends whose unbounded hospitality contributed so largely to this success.

From The Veterinarian, August, 1828.

The Velocity of the Circulation of the Blood.

(COMMUNICATED BY M.).

M. HERING, of Stuttgart, has made some novel experiments on the velocity of the circulation of the blood in the horse. The subject had been often discussed, and many ingenious and elaborate calculations had been formed, but the result had been uniformly unsatisfactory. If the action of the heart be the moving power, the force of that organ has never been ascertained. It is estimated by some at a few ounces only, and by others at nearly two hundred thousand pounds. Supposing, however, according to the statement of some physiologists, that the blood be propelled into the aorta at each contraction of the left ventricle with a velocity of 120 feet in a minute, that velocity will soon diminish with the calibre of the vessel and the tortuousness of its course, and will not be the same in any two portions of the frame.

The enquiries of other philosophers have not led to a more definite result. They have calculated the quantity of blood contained in the vessels, and the quantity which the ventricles of the heart will contain; then, dividing the general mass by the contents of ventricles, they have the number of pulsations in which a complete circulation of the fluid takes place. There are, however, some unfortunate and insurmountable difficulties attending this computation. The number of pulsations in a given time differs widely in different species of animals, and in different animals of the same species; and the capacity of the ventricles differs yet more. It is well known to every veterinarian that the left ventricle is, in some full-grown horses, twice as capacious as in others. In the right ventricle this variation is yet more remarkable. As, therefore, the actual quantity of blood cannot be ascertained, nor the capacity of the ventricles scarcely guessed at, a calculation of the pulsations will afford a very imperfect estimate of the rapidity of the circulation.

M. Hering has adopted a much more satisfactory method of experiment. He sought out some substance readily

soluble, easily detected in the minutest proportion by certain chemical tests, and which, mingling with the blood, would not materially affect the circulation. He fixed on the hydrocyanate of potassium. He dissolved one drachm of it in eleven drachms of water, and he found that he could detect it in the serum in the proportion of one part in 20,000, by means of the sulphate of iron. He opened the jugular, and introduced two or three ounces of the solution into the vein. He did not inject it, because he would not add to the force of the circulation, but poured it into a funnel, and thus suffered it to mingle with the blood. He then, at short intervals, drew blood from various parts of the body ; and when the serum was separated, exposed it to the action of a solution of the sulphate of iron. If a blue precipitate was formed, it indicated the presence of the hydrocyanate of potassium. The results will interest the readers of the *Veterinarian*, and surprise many of our physiologists.

In from twenty to thirty seconds the hydrocyanate passed from one jugular to the other ; it reached the submaxillary artery on the other side in from ten to twenty-five seconds ; and the artery of the pastern of the hind extremity in from twenty to forty seconds. An increased frequency of pulse did not indicate an increased rapidity of circulation. The hydrocyanate reached the same point in the same time, under very considerable variations in the number of pulsations.

In a space varying from two to eight minutes it was secreted by the serous membranes, but in a small quantity.

From the mucous membranes it was excreted more slowly, and in the following order:—The villous portion of the stomach, the intestines, the respiratory organs, the urinary and genital system. Where the mucous membrane was covered by an epithelium, as the eye, mouth, œsophagus, and cuticular portion of the stomach, no excretion could be perceived.

In one minute the hydrocyanate was found in the cortical and sometimes in the tubular substance of the kidneys.

In one minute it was conveyed from the jugular vein to the thoracic duct ; but could not be always detected in the lymphatic glands.

In a short time it was eliminated from the blood ; and in twenty-four hours could not be discovered in any of the solids. *Zeitschr. für Physiol.*

R.C.V.S. Obituary.

Symes, John Charles (late Capt. R.A.V.C.), Reckleford House and Market Street, Yeovil, Somerset. Graduated, London, December, 1898. Died, 8th July, 1929. Aged 56 years.

Liverpool B.V.Sc. Examinations.

The following is the University of Liverpool, School of Veterinary Science, Examination List for July, 1929, in connection with the University Degree of B.V.Sc. :—

Final Examination.—*Part I.* Fuad, el S. (*Parasitology and Entomology*), Mohamed, Z.

Third Examination.—*Part I.* Sidhom, N. B. ; *Part II.* Sidhom, N. B. ; *Part III.* Sidhom, N. B.

Second Examination.—*Part I.* Jenkins, E. D.

First Examination.—*Part I.* Marginson, J. C.

Army Veterinary Service.

Movements of Officers.

Brevet Lieut.-Colonel H. E. Gibbs, D.S.O., proceeded to York on the 7th instant, for duty, and will officiate as Assistant Director of Veterinary Services, Northern Command, during the absence on leave of Lieut.-Colonel B. L. Lake, D.S.O., O.B.E.

Major L. Danels will officiate as Officer i/c R.A.V.C. Records in addition to his present duties as Officer Commanding, R.A.V.C. Dep t, from the 7th instant, pending further instructions.

Major M. A. Murphy and Lieutenant A. G. Heveningham are at present in this country on leave from the Sudan.

ABSTRACTS.

[**Two Atypical Cases of Anthrax in the Horse.** (Lorscheid.) *B. T. W.* 44. 52. 905—6].

A three-years'-old horse out at pasture, with severe dyspnœa, temperature 105.2°F., pulse 80 and hard ; nasal m.m. intensely congested and a small quantity of a white foamy fluid at nostrils. The lymph glands of the throat were swollen and painful, and the superior portion of the neck, in the region of the retropharyngeal lymph glands, was swollen on both sides. A diagnosis of acute pharyngitis was made and tracheotomy performed.

Next day the condition was unchanged, with the exception that tracheotomy had permitted easy respiration. Suddenly the animal became uneasy, reared, jumped on the manger and fell over. After 10 minutes it arose and repeated the process, dying shortly afterwards.

A second horse, feeding in the same field as the above, became ill on the same morning, and except for the " mad " stage, showed the same symptoms. It died after a three hours' illness.

Post-mortem.—A few petechiæ on outside of heart ; lungs very œdematous. The subcutaneous tissue of the upper neck region was gelatinously infiltrated, as was that around the pharynx and epiglottis. The retropharyngeal lymph nodes were of the size of a child's fist, very juicy and beset with petechiæ. The œsophageal lymphatic glands were in a similar condition.

Anthrax bacilli were demonstrated in the juice of the swelling and of the glands in considerable numbers ; only an occasional one was seen in the blood and spleen smears.

In the field in which the horses grazed, no case of anthrax had occurred for five years ; the animals drank from the water present in a deep dug-out trench.

[**A New Aid to Parturition in Swine Practice.** (Voss.) *B. T. W.*, 45. 10. 157].

The aid consists of four rubber finger stalls, fitting the thumb, index, middle and ring fingers and reaching nearly to the first joint. A pair of holes are present in each and through these runs a piece of string. A noose can thus be formed, with a long free end of cord. In operation, the " threaded " finger stalls are placed on the fingers, the hand inserted into the uterus and the noose placed over the fœtus' head. Keeping a piece on the free end, the stalls are allowed to slip off and the noose tightened.

[**Narcotics in the Treatment of Colic.** (Szilagyi, B. (1928), *Allatorvosi Lapok* 51, 21. 251—3].

Morphin spasmodically closes the pylorus, causes constipation, stimulates the spinal cord, and, therefore, should be used only when a decrease in peristalsis is desired. The much cheaper atropin relieves pain by paralysing the vagus branches ; peristalsis is not interfered with, tenesmus is allayed, pyloric-spasm is relaxed and, in addition, it has an advantageous effect on the heart and lungs through the vagus paralysis.

DIVISIONAL REPORT.

Central Division N.V.M.A.

The holding of the annual meetings of the Royal College and of the Victoria Veterinary Benevolent Fund earlier in the day adversely affected the attendance at that held in the same building on the evening of June 6th, 1929, and thereby produced two untoward, but fortunately remediable, results. The first was an altogether inadequate discussion on a remarkably instructive paper by Mr. D. E. Wilkinson on "Some Notes on Plastic Surgery," and the second the impression conveyed upon, and expressed by, Professor J. D. Stewart (the Division's distinguished visitor from Australia) that the meeting of an old-established and famous veterinary society at the heart of the Empire could show no larger an attendance than similar gatherings at Sydney. It is, of course, certain that after reading the paper in this issue of the *Record*, the adjourned discussion, will, under normal circumstances, be enjoyed by a greatly augmented number and be really worthy of the exhaustive effort which inspired it.

The Chair was occupied by the President (Professor James Macqueen) and there were also present:—Captain L. S. Balls, Mr. W. Brown, Mr. H. E. Bywater, Professor Tom Hare, Messrs. H. D. Jones, H. C. P. King, Herbert King, Major H. Kirk, Mr. G. H. Livesey, Professor J. McCunn, Mr. J. W. McIntosh, Lt.-Col. W. A. Pallin, Mr. W. Perryman, Mr. J. H. Poles, Major G. Rees-Mogg, Lt.-Col. P. W. Dayer-Smith, Miss K. W. Shedlock, Captain R. J. Stow, Mr. E. L. Stroud, Captain W. K. Townson, Messrs. D. E. Wilkinson, J. Willett, J. D. Williams, Professor G. H. Wooldridge, Professor J. G. Wright and Captain J. F. Macdonald, Hon. Secretary. *Visitors.*—Messrs. S. N. Adams and Professor J. Douglas Stewart, of the Veterinary School, University of Sydney. The minutes of the April meeting of the Division, which had been published in the *Record*, were taken as read and more confirmed and signed. The only items of *correspondence* were letters of apology for absence from Mr. H. Bell, Major G. W. Dunkin, Mr. G. P. Male, Major-General Sir John Moore, Captain S. J. Motton and Mr. C. Roberts.

Representatives to Council, N.V.M.A. The following were elected:—The President, Principal F. T. G. Hobday, Major H. Kirk, Mr. J. W. McIntosh, Captain W. K. Townson, and the Hon. Secretary (*ex-officio*).

Morbid Specimens and Cases of Interest.

Mr. W. Perryman: I have two sets of specimens here which I think are of more than usual interest. The first set belongs to a heavy cart horse, an animal I had known for six or seven years. He was the subject of frequent attacks of colic; in fact, I can say that during those years he probably had more attacks of colic than all the other thirty or forty horses in that stable put together. We anticipated that during one of these attacks he would get a twist and that would be the termination.

Three weeks ago he had a severe attack one night; the next morning he was *in extremis* and we had him killed. On account of the history, I was most anxious to make a thorough *post-mortem*, but unfortunately, as this animal was carted to Croydon I could not follow him. I 'phoned instructions, however, and the abdominal organs were brought back.

The first specimen is the reticular portion of the stomach. Although the action of the preservative has obliterated much, it is possible even now to see that one big area is much thinner than the other; there is no doubt that a large area of muscular tissue is wanting. One could imagine that when the organ was distended with food, this portion would be very thin. Where the mucous membrane is raised up into papillæ, I think that is evidence of the lesions left by bots.

Coming along to the bowels, the small bowel was tightly twisted and that showed the usual characteristics. The large bowel showed nothing particularly wrong, but following up the vessels it was very easy to see—as you can see here; this is the cœliac artery—a very big aneurism here and another along there. With the exception of the endothelial lining there was nothing very noticeable about these aneurisms. The whole point is, had these much to do with the animal's frequent attacks of colic? There is no doubt in my mind that distension of the stomach was the main cause. The case is interesting, because this animal was so frequently the subject of colic.

I have once before seen a case in which a large portion of the stomach was very thin, and in that case the animal used to get distended stomach and show brain symptoms. I recollect, on another occasion, making a *post-mortem* and finding several mesenteric arteries supplying the small bowels blocked with thrombi, and the portions of bowel supplied by these arteries showed an anæmic appearance, due to the cutting off of the blood supply.

The second set illustrates a case of complete fracture of the humerus, and I have never seen a humerus broken like it. I have frequently seen the humeral ridge damaged, but never completely broken off. This happened three weeks ago, and the animal was brought to my place in an ambulance, where I saw it. When I first saw the horse it was standing on the limb, and although the ambulance man said it had a broken shoulder, I could not believe him, but thought it was dislocated. But directly I moved the horse, crepitus was marked.

I sent him on to the knacker's to be destroyed. The horse was one of two in a van proceeding along a rough road. They passed over a man-hole, and the man-hole slewed the van round and the pole struck this horse on the shoulder and broke the bone completely. One can imagine with what tremendous force the blow must have been inflicted. There is no evidence of disease in the bone.

Replying to Professor Wright, who enquired what medicaments were given in the colic case, Mr. Perryman said that he administered the customary colic treatment, commencing with turpentine and æther and oil, following with sedative medicine when the pain was acute. In very acute cases he always used morphia.

Professor Wright said that he asked because he remembered seeing a *post-mortem* at the Royal Veterinary College in a case in which there was a distinct lesion in the stomach, and Sir John M'Fadyean was keen to point out that this was due to the medicine, namely, balls of carbonate of ammonia.

Professor WOOLDRIDGE: I take it that that lesion is a breach of the muscular coat and not of the mucous membrane, whereas in that (Professor Wright's) case it was a breach of the mucous membrane only. The interesting thing is to form an opinion as to what extent an aneurism predisposes to a twist. One not infrequently meets with aneurisms of this kind in old horses that have died from such an affection as pneumonia, and one would hardly think that recurrent attacks of colic were due to that, but that, in all probability, the original attacks of colic were due to the presence of the parasites which caused the aneurism. In my experience, these old aneurisms do exist without the occurrence of colic.

Mr. J. WILLETT: I have no morbid specimen to show, but I had a case last week which interested me and I think it may also be of interest to the meeting.

I had to go up to Yorkshire, on business connected with horses, to a Master of Hounds. I arrived at about nine o'clock, and I was asked to see a Foxhound bitch which was expected to whelp. She was sitting on her haunches with her front legs wide apart. Her abdomen was much distended and she was breathing rapidly. I tried to take her pulse, but it was imperceptible; her gums were cold and she was, in fact, moribund. I expressed the opinion that she would not live through the night.

The bitch was shot, her womb immediately opened and fifteen puppies were taken out—twelve were alive and three were dead. In the morning foster mothers were procured and later a third. Since then I have heard that the whole twelve are thriving well.

Professor WOOLDRIDGE: The most interesting item in that connection is that the puppies survived the shock of the shooting of the mother.

Captain L. S. BALLS: I should like to ask Professor Wooldridge what is the best way to kill a bitch under such circumstances.

Professor WOOLDRIDGE: I should anæsthetise the bitch, take the puppies out while she was still alive, and then kill her with the chloroform.

A MEMBER: If the bitch was moribund and her gums were cold, would not the chloroform kill her right away?

Professor WOOLDRIDGE: That would not affect the procedure.

Colonel PALLIN: I would like to ask Professor Wooldridge if he has ever chloroformed a bitch under conditions of pregnancy and, if so, what the result has been. Have you had a better result?

Professor WOOLDRIDGE: I have, in that I have managed to save the life of the bitch in quite a number of instances.

The PRESIDENT: I suppose Professor Wooldridge saved the bitch by performing metrectomy.

Professor WOOLDRIDGE: Performing metrectomy has been the way I have generally done it, by Porro's operation rather than cæsarian section, because of the expediency. In the last case of this kind I had I took away four puppies. Three of them lived for a week, and then one of them died. The owner's baby sat upon the other two when they were doing extraordinarily well.

Professor MCCUNN: I think Professor Wooldridge misunderstood Colonel Pallin. He wanted to know if Professor Wooldridge had had success with a bitch as described by Mr. Willett, *i.e.*, one practically moribund and pulseless. Have you had any success with a bitch in that state?

Professor WOOLDRIDGE: I do not know of anybody who has ever saved any bitch that was moribund (Laughter). I was asked a question as to what would be my line of procedure in a similar case, and my answer was that I should anæsthetise and perform metrectomy. The subsequent questions arose from misconceptions on the part of others than myself. (Laughter).

Mr. J. D. WILLIAMS: I have here a rubber ball passed by a Sealyham dog. I was called to this animal who presented one of the usual cases of what I term sanitary engineering. I removed large quantities of bone and other foreign material, but something remained which I could not get away. We left it at that for the night, as the dog was in a very weak condition; but the next day, when he had picked up a bit I had another try, but still failed to remove the obstruction by oil in the rectum, forceps or any other means. The animal went on up and down for ten days and eventually he managed to pass this rolled-up ball.

ANY OTHER BUSINESS.

The PRESIDENT: Under this heading, I desire to submit for your consideration and action—not necessarily to-night, but at some future date—six questions.

The first is:—Is it desirable to publish particulars of prescriptions mentioned by essayists and by speakers in discussions?

The second—Is advertising in the lay press of instruments invented by veterinary surgeons detrimental to the veterinary profession?

Number three is—Should the advertisements of firms who sell drugs and instruments to the public be inserted in the veterinary press?

Number 4—Should veterinary surgeons be advised to deal with firms who sell drugs or instruments only to registered members of the veterinary profession?

Number 5—Should veterinary surgeons be encouraged to patent instruments for veterinary purposes and to draw a royalty from their sale?

Number 6—Should members of the veterinary profession who are engaged in the production or sale of proprietary articles for the public be excluded from veterinary societies?

I do not expect any discussion on this occasion (proceeded the President), but I think that if these six questions are recorded, we might manage to initiate a discussion on their usefulness or otherwise at a later meeting.

The HON. SECRETARY: I would suggest that one of our meetings next session be devoted to the consideration of these questions.

The meeting concurred.

Mr. G. H. LIVESEY: There is one matter to which I should like to draw the attention of this society, namely, the distribution of distemper vaccine. The vaccine which is being prepared under the control of the Medical Research Council, I understand, is being manufactured by one firm and will, I suppose, eventually come upon the open market. (Voices: "It is already upon the market.") Practitioners in the country are very anxious that these vaccines shall not get into the hands of unqualified and unregistered men, and it appears, if what I hear is correct,

that the danger is real. It is a matter, I think, which is of interest to a very large number of veterinary surgeons and which perhaps might be worthy of a little discussion here to-night. Though these preparations are in the hands of one firm and that firm, for the present, at any rate, has decided that it will not supply except to members of the veterinary and medical professions, have we any guarantee that they will continue to do so or that, even in the meanwhile, they will not supply other chemists? Because we know that there are many firms of chemists who supply a large quantity of veterinary preparations not merely to veterinary surgeons, but to the laity. It is felt by many practitioners that it is possible, through trade facilities, that these vaccines may come into the hands of distributing houses who are not pledged to restrict their sales to professional men, and so they will get into the hands of unqualified men, to the detriment of our profession and to the detriment of the public. I thought that this would be a very good place in which to ventilate the question and to see if we cannot secure some sort of protection. I would draw your attention to the fact that if this vaccine has the value which is ascribed to it, and in practice proves to be a real preventive of distemper, we have to look forward to losing about 70 per cent. of our dog practice, and if the public has the unrestricted use of the vaccine we cannot tell what untold harm may be done.

The PRESIDENT: It occurs to me that this question is much on a par with the sale of tuberculin, and I believe there has been an effort made to limit the sale of tuberculin, but I do not know what progress has been made. Perhaps Mr. McIntosh, who is a member of the Councils of the R.C.V.S. and N.V.M.A. will know something about what has been done to control the sale of tuberculin, and if we knew the facts, they might give us some encouragement to make an effort to control the sale of this distemper vaccine. The position, as far as I understand it, is that the Medical Research Council has handed over the preparation of this specific to a firm of wholesale druggists, who make it, and I do not know what restrictions, if any, exist as to the sale. I believe it is on the market now and can be procured by anyone, qualified or unqualified, and now is the time to step in to see if anything can be done to control the sale.

The meeting resolved itself into committee to pursue the consideration of the subject.

Upon the resumption of open meeting the PRESIDENT remarked, amid laughter, "The committee has died a natural death." He then called upon Mr. Wilkinson to read his paper, entitled "Some Notes on Plastic Surgery," which is reproduced at the commencement of this issue of the *Record*, together with the report of the brief discussion upon it which was all that the lateness of the hour and the sparseness of the attendance allowed.

At the conclusion of the discussion, Professor McCUNN said: I am sure every member of the Society would desire that this opportunity should be taken of conveying to our President, and also the Council of the Royal College of Veterinary Surgeons, our congratulations upon his recent election to that body. (Loud applause.)

The PRESIDENT: While I thank you for your kindness and also for your confidence, I do not know that it is an unmixed blessing to be a member of the Council of the

(*Continued at foot of next column.*)

Sheep Scab Conference Report.

MINISTER OF AGRICULTURE RECEIVES DEPUTATION FROM THE ROYAL AGRICULTURAL SOCIETY AND THE NATIONAL SHEEP BREEDERS' ASSOCIATION.

At a meeting of Council, N.V.M.A., held on 2nd July, 1929, the following report was received, and was referred to the Editorial Committee for publication in the *Veterinary Record*:—

On March 6th, 1929, the Minister of Agriculture, attended by Mr. J. Jackson, M.R.C.V.S., Captain Briscoe, M.P., and Mr. Houghton, received the deputation from the Royal Agricultural Society and the National Sheep Breeders' Association in order to discuss what could be done to lessen, and if possible stamp out, sheep scab in Great Britain.

Sir Merrik Burrell, Captain Johnstone and Mr. Alfred Mansell represented the R.A.S.E., and Mr. Egerton Quested and Mr. Stilgoe the National Sheep Breeders' Association.

A lengthy discussion took place, the whole situation being carefully reviewed. It was agreed by all that, although the current regulations of the Ministry of Agriculture are sufficient and need no alteration, yet the present position is deplorable. Therefore the gravity of the fact that the outbreaks of this disease are to-day as frequent and as widely spread as they were 20 years ago, in spite of every kind of official effort to reduce them, cannot be exaggerated.

It was agreed also that the suggestion of a double dipping order (*i.e.*, dipping twice within 14 days) for all counties, is unwise and illogical. Success is more likely to be obtained by concentrating the efforts of inspectors, and the expenditure of money, on those counties where the disease is known to exist, rather than by squandering them over the whole country, and putting sheep owners in clean districts to the annoyance and expense of double dipping their sheep in order to cure them of a disease which they have not got.

The failure of the well-conceived regulations of the Ministry to achieve any sort of result is due to two factors:

(i) The farmers in sheep scab areas do not take the trouble to round up all their sheep at dipping time, and leave many scabby sheep behind on the hills.

(ii) They do not dip efficiently those they do collect. The sheep are not properly immersed, and the dip is not kept at proper strength. Sometimes they do not even use proper sheep dip at all.

The carelessness, and evasion of the duty of carrying out the regulations, is caused by the fact that many of the men do not look upon sheep scab as a serious trouble and a disgrace to have on a farm. In Australia and New Zealand, where people think in terms of "sheep," and where the solvency of the country depends on the wool clip, publ c

(*Continued from previous column.*)

Royal College. It remains to be seen how we get on. (Laughter and applause).

The meeting terminated with the passing of a hearty vote of thanks to the essayist, while a similar tribute was paid to those who presented *post-mortem* specimens and related cases of interest, and to the President for his conduct in the chair. J. F. MACDONALD, *Hon. Secretary.*

opinion, and the farmers' own interests, forced them to take such drastic and concerted action that the disease was quickly stamped out.

In this country that is not so. Here our wool trade is a minor matter, and there is too little public opinion behind the official regulations to ensure their enforcement. This causes men with scabby sheep to hide them instead of reporting them; one farmer shields the next instead of reporting him, and when the Ministry's inspectors discover cases of non-reporting, and of omitting to dip, the fines imposed are insignificant. In the last quarter of 1928 the Ministry prosecuted in 53 cases. In three cases adequate fines were imposed. In the remaining 50 cases the average of the fines was £3 2s. 8d. In Wales the average fine was £1 9s. 3d.

Another very disquieting aspect of the situation is that out of 743 outbreaks in 1928, 22 per cent. were not reported but were discovered by the inspectors. There is no doubt that many other cases exist which are neither reported nor discovered.

The policy of putting the onus of having sheep scab among his sheep on the farmer, and of punishing him for having it on his farm was tried in 1923, and had to be withdrawn as it only increased concealment and consequently the spread of the disease.

During the past five years the Ministry has sent teams of inspectors into the worst areas, *i.e.*, North Wales, to lecture and assist the local authority in rounding up sheep and supervising the dipping in each area. But success was not attained owing to the apathy and deliberate obstruction of some of the local farmers. Very few attended the lectures. When the big drives of sheep were organised, if scabby sheep were found some of the men would even tie the sheeps' legs and leave them in the bracken so that they should not be discovered and the owners blamed for not reporting.

Wales, and especially North Wales, may be the worst districts, but it would be unwise, and unfair, to blame those areas alone. There are parts of Scotland and of England also where conditions are nothing less than a disgrace.

Certain clean and adjacent counties have formed themselves into groups and, although allowing mutual unrestricted movement of sheep, allow no sheep from outside to enter a market in their group area unless double dipped, or to be double dipped after arrival on private premises.

But of late several cases have occurred when these protective barriers have been punctured, and sheep owners have failed to double dip sheep after they have been imported into the area. Nothing but severe fining of anyone importing sheep without double dipping them immediately on arrival into the clean area, can guard the clean areas adequately. The difficulty is to get all clean counties to act in concert and on identical lines.

The Minister is of opinion that his staff can be no more successful in their efforts than they are at present, until public opinion is sufficiently educated and aroused so that farmers and magistrates help and support the inspectors. In no other way can the seriousness of non-reporting, of inadequate rounding up of sheep, and of inefficient dipping, be brought home to the delinquent farmers. He would welcome and support gladly any steps which the Royal Agricultural Society thinks it desirable to take in this direction. (*Signed*) MERRIK R. BURRELL.

Royal (Dick) Veterinary College.

ANNUAL PRIZE-GIVING CEREMONY.

The annual prize-giving ceremony of the Royal (Dick) Veterinary College, Edinburgh, was held in the College hall on Wednesday, July 3rd. Dr. T. G. Nasmyth, F.R.C.S.E., presided, and the prizes were presented by the Very Rev. Dr. J. Harry Miller, in the absence of the Marquis of Linlithgow.

Reference was made, in the course of the proceedings, to developments in the form of additions to the equipment and the acquiring of adjacent property to meet the need for additional buildings at the College, and a movement by the students to secure a playing field.

The Chairman said he would like to remind the students that the profession upon which they were embarking was one that was essential to the great industry of agriculture and to the lower animals. It was a noble profession and one of increasing importance. The activities of the College had been much extended during the past few years. Research work was much greater in all the departments, and additional laboratories for that purpose were becoming a necessity. They had recently acquired adjacent property, which, when they got the necessary funds, would enable an additional building to be placed there for the work of the College. Money would be required, however, and he suggested to veterinary students, past and present, that they should form a kind of alumnus association, which for a start might work to raise money for that accommodation. (Applause.)

Dr. O. Charnock Bradley, Principal of the College, said that no happening was so indicative of progress at the College as the acquirement of adjacent property to which the chairman had referred. So far as the existing buildings were concerned, the session had been marked by considerable additions to the equipment of the various laboratories and departments. Possibly the most useful—at any rate, the most spectacular—of the additions to the equipment was the arrangement of an electrical department in the hospital, with an X-ray installation. They might claim without fear of any question that research had never been more abundant, more vigorous, and more productive of good results than during the past session.

UNIVERSITY DEGREES.

In Edinburgh they had had University degrees in veterinary science for the past 18 years, and the pity was that it was not possible for more men to take advantage of these degrees. The fault for that lay on the parents and guardians of those who intended that their sons or those they guarded should become veterinary surgeons, for boys were allowed to leave school with a certificate in general education that was inadequate and would not permit a University degree to be taken. It seemed a pity that parents did not exercise a little more control and insist upon the boys passing an examination that could be accepted by a University. In these days when it was the proud boast of the educationist that a University education was within the reach of all, it seemed somewhat strange that a deficiency, or an apparent deficiency, in general education should debar so many from taking advantage of University facilities.

Another happening which it gave him great pleasure to announce was a movement on the part of the students themselves by which it was hoped that in time the College might be possessed of a playing field. That was an admirable movement, and one worthy of all support.

The prizes were then presented to the winners by the Rev. Dr. J. Harry Miller, who said he was tremendously impressed with the increase in the specialised subjects that had now to be followed by everyone who would make his career in the veterinary profession.

The following is the Prize List:—

Best aggregate (Macfarlane Medal) for final year, A. P. Steele, B.Sc.; Gemmell Scholar, H. M'Vean; Tindal Scholar, W. P. Blount, M.R.C.V.S.

Bronze and Silver Medals—

Junior Anatomy—W. B. Forrest (silver medal); F. H. Addison (bronze medal).

Practical Anatomy—A. J. Alexander (silver medal).
Chemistry—W. B. Forrest (silver medal); I. H. Chalmers (bronze medal).
Practical Chemistry—G. C. Mackie (bronze medal).
Biology—W. B. Forrest (silver medal); G. B. Fairweather (bronze medal).
Senior Anatomy—H. M'Vean (silver medal); W. G. Edwards (bronze medal).
Practical Anatomy—W. G. Edwards (silver medal).
Histology—W. G. Edwards (bronze medal).
Physiology—W. G. Edwards (silver medal).
Physiology—H. M'Vean (silver medal).
Practical Physiology—L. Dougal (bronze medal).
Zootechny—J. Johnston (silver medal); D. V. Sinclair (bronze medal).
Pathology—L. Sahai (silver medal); W. G. Robinson (bronze medal).
Bacteriology—A. E. Stevenson (silver medal); W. G. Robinson (bronze medal).
Hygiene—W. G. Robinson (silver medal); J. Omand (bronze medal).
Materia Medica—W. G. Robinson (silver medal); L. Sahai (bronze medal).
Surgery—A. P. Steele, B.Sc. (silver medal); J. B. M'Kinna (bronze medal).
Obstetrics—A. P. Steele, B.Sc. (silver medal); J. B. M'Kinna (bronze medal).
Medicine—J. B. M'Kinna (silver medal); A. P. Steele, B.Sc. (bronze medal).
Parasitology—J. B. M'Kinna (bronze medal).
Clinique—A. P. Steele, B.Sc. (silver medal); J. B. M'Kinna (bronze medal).
Clinique—W. S. Davison (bronze medal).

NOTES AND NEWS.

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events.

Aug. 31st to Sept. 6th.—N.V.M.A. Congress at Ayr.

July 15th.—Meeting of the Editorial Committee, N.V.M.A., 10 Gray's Inn Square, W.C., 4-30 p.m.
,, 18th.—Meeting of the Western Counties Division, N.V.MA., at Plymouth, 2-30 p.m.
,, 19th.—Meeting of the Mid-West and South Wales Division, N.V.M.A., at Barry, at 3 p.m.
,, 23rd.—Visit of the Central Division, N.V.M.A., to Lamington Park.
,, 25th.—Meeting of the Eastern Counties Division, N.V.M.A., at Norwich, 2 p.m.
,, 26th.—Meeting of the Royal Counties Division, N.V.M.A., at Windsor, at 2-30 p.m. Meeting of the Yorkshire Division, N.V.M.A., at Leeds, at 3-30 p.m.

R.C.V.S. President.

At a meeting of Council R.C.V.S., held at 10 Red Lion Square, London, on the 5th instant, the election was made as President of the College, in succession to Dr. J. T. Share Jones, of Professor J. F. Craig, M.A., M.R.C.V.S., Principal of the Veterinary College of Ireland, Dublin. A full report of the proceedings at the Council meeting will appear in an early issue of the *Record*.

Personal.

Appointments.—The four successful candidates for the whole-time appointments recently made in Durham County were Mr. H. B. Allan, M.R.C.V.S., D.V.S.M., Mr. E. R. Callender, M.R.C.V.S., Mr. G. Durrant, M.R.C.V.S., B.V.Sc., and Mr. L. E. Perkins, M.R.C.V.S.

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Wills.—Mara Eleanor, Lady M'Fadyean, of Highlands House, Leatherhead, who died on May 3rd, wife of Sir John M'Fadyean, left estate (unsettled) of the gross value of £1,014, with net personalty, £956.

Marshall, Mr. Charles Winlove (66), of Farnham, Surrey, veterinary surgeon (net personalty, £10,095), £11,684.

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Mrs. Rees-Mogg's Show Successes.—We were interested to observe the following in the *Live Stock Journal* report of the memorable Three Counties Show recently held at Gloucester: "Last year's Royal Show champion, the evergreen Hardinghall Dairymaid, now the property of Mrs. Graham Rees-Mogg, came out in splendid form to add another to her long list of victories. She has quality, symmetry, a good vessel, dairy ability and type; indeed, it is questionable whether a more fitting queen of the breed has ever reigned, not even excluding those two wonders Hedges Froukje and Northdean Meibloem. In her fourth show season Hardinghall Dairymaid is as good as ever she was." The victory to which reference is made was the female championship of the Show. "Yearling heifers provided another victory for Mrs. Graham Rees-Mogg, whose Moordale Winsome, a rare quality sort, was preferred to Captain John Christie's Glyndebourne Nellie, that won at Southampton. In the old bull class Mrs. Rees-Mogg's Washway Premier, a previous winner and a nicely-balanced two-year-old, was third."

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Pan-African Congress.—Dr. W. H. Andrews, M.R.C.V.S., Director of the Ministry of Agriculture Veterinary Laboratory and Capt. W. W. Henderson, M.R.C.V.S., Chief Veterinary Officer, Nigeria, have sailed for South Africa to attend the Pan-African Veterinary Conference at Pretoria.

CORRESPONDENCE.

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.
All correspondence must bear the name and address of the contributor for publication.
The Editor does not hold himself responsible for the opinions of his correspondents

The Physiology of Ruminant Digestion.

To the Editor of the Veterinary Record.

Sir,—The numbers of your journal which contain Mr. J. Hammond's paper on "The Physiology of Ruminant Digestion," and the evoked discussion have recently reached me. I am surprised that no reference was made to an important paper on the subject which appeared three years ago in what is, I suppose, the most widely-read journal of physiology in the world. I refer to a paper entitled "Der Wiederkäuermagen im Röntgenbild. I. Mitteilung," by Czepa and Stigler (*Pflüger's Archiv. f. d. gesamte Physiologie*, 1926, Vol. 212, pp. 300-356).

This long article deals with (1) the movements of the separate parts of the alimentary canal; (2) the tracks of liquid and solid food when first swallowed. A second communication dealing with rumination was promised but, if it has appeared, I have not seen it.

In this article Mr. Blount can find a full and clear account of the movements of the first three stomachs. He will also find the explanation of why the reticulum should apparently be a predilection site of such diverse substances as nails and water, and yet not of heavy food. Briefly this explanation is that the reticulum contracts independently of the rumen, and with such strength that it almost completely empties itself of food, though not of long solid objects, like nails, which lie on its floor. When it expands, then naturally only the more liquid portion of the rumenal contents can pour quickly into it.

The whole article is delightful, and as it is more recent than the much-quoted work of Wester (1923), it is a pity that Mr. Hammond overlooked it when preparing his paper.

Yours faithfully, H. E. HORNBY.

Veterinary Laboratory,
Mpwapwa, Tanganyika Territory.
8th June, 1929.

Human Infection with Tuberculosis of Bovine Origin.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—The general subject of tuberculosis—both in humans and animals of the lower order—and the pressing need for all carefully-considered schemes of prevention to receive the attention which they may merit, continue to possess as great an importance as they did years ago.

In the absence of any known cure, attention must be paid to preventive measures, and the ease with which the disease can be passed from our own patients to ourselves, either by milk or meat, accentuates the vast importance to the community generally of rearing tubercle-free stock.

All this is common knowledge and well known to all veterinary surgeons, but it is quite clear, I think, that the general public is insufficiently educated in this respect and the question has often been raised as to the best means of bringing this to pass.

Mr. Arthur Gofton has recently provided us with a method of attaining this desirable state of affairs when he addressed a party of visitors to the Edinburgh Corporation dairy farm and explained fully the methods which he has adopted to free the Corporation herd of tuberculosis and also of other diseases.

The Lancet (July 6th, p. 53) states: "Mr. Gofton's account of this farm deserves careful study, for it is important that milk supplied to an infectious disease hospital should be free from tuberculous infection, to which children suffering from scarlet fever, measles, and the other exanthems are especially susceptible."

This, Sir, is the sort of information which the public needs and, in my view, an excellent method of passing it on.

Yours faithfully, GEORGE W. DUNKIN.

National Institute for Medical Research,
Farm Laboratories, Mill Hill, N.W.7.
5th July, 1929.

Horses on Main Roads.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—The attention of the Council of the National Horse Association has been drawn to articles in certain sections of the London Press regarding a suggestion to ban horses from main London Streets. The Council considers the allegation that the horse is the sole cause of obstruction to traffic not only unfair, but entirely untrue, and one which cannot be substantiated by facts.

Anyone who takes the trouble to watch the traffic of the London streets, main or otherwise, must come to the conclusion that the horse is in no way "An obstructive anachronism," and that the "Lumbering horse vehicle" does not "HOLD UP" thousands upon thousands of miles of anxious traffic, with the inevitable cost of millions a year to our trade, as stated so alarmingly by one leading newspaper.

The Council desires most emphatically to deny the statements referred to, and it would be wanting in its duty to the horse industry, and indeed to common veracity, if it did not take action to put the other side of the question.

To ban the horse from our streets would in no way "Confer a great boon on the trade of the nation," nor would it achieve the results claimed, but it would undoubtedly injure an industry which is part and parcel of the oldest industry in our country, *viz.*, agriculture, which all governments are pledged to support.

Furthermore, it has been abundantly proved that the horse is (1) the cheapest form of transport for short journeys; (2) the only method possible for the small trader; (3) more adaptable in narrow thoroughfares and for businesses involving constant calls.

It is also perhaps significant that in New York the whole of the delivery of the parcel post and retail milk supply is carried out by horse vehicles.

Attendance at the London Cart and Van Horse Parades this year would, we feel assured, have convinced the most sceptical that the horse is an essential and economical factor in industry. Moreover, a visit to the Tower Bridge, where the commercial use of the horse is most apparent, will show that horsed vehicles do not in any way impede or hold up traffic, which at this place is one continuous uninterrupted stream.

Further, we maintain that horses are mainly used in streets collateral to main passenger traffic routes, and to put any restriction on their use in, and the crossing of, main routes would debar them from access to less frequented thoroughfares, and be to the detriment of economic transport by traders.

Yours faithfully,

CECIL G. ARGLES, *President.*
WALTER GILBEY, *Treasurer.*
J. MOORE, *Chairman.*

On behalf of the Council of the National Horse Association of Great Britain.

12 Hanover Square, London, W.1.
July, 1929.

Some Problems associated with Canine Obstetrics.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—Only the distance to travel and an important engagement at home prevented my asking permission to attend the meeting of the Lincolnshire N.V.M.A. in order to hear Professor Wright's excellent paper upon this most interesting subject and I am glad to have the opportunity, afforded by its early publication, of reading it. There are, however, one or two points upon which, without offering any adverse criticism, I would like to comment.

I have always found that when live and dead puppies are associated in the same parturition, excluding puppies which die or are killed during delivery, the dead puppies are either the first-born or the last born.

This arises from the fact that one uterine horn is delivered of the whole of its contents before the other horn is presented to the birth canal and, to my mind, often explains the complete failure of pituitary extract to cause uterine contraction and expulsion of uterine contents. If the horn containing live puppies is presented first the tone of its circular muscles is usually sufficient to ensure normal delivery of its contents. Difficulty arises, however, when this has been completed; the normal horn has been retracted and commenced to contract, leaving the dead puppy or puppies in the opposite horn. The birth canal having been dilated by the birth of live puppies, delivery by means of forceps may be easy, but I have generally found inertia of the horn containing the dead puppies complete and offering no response to pituitrin, although the systemic tonic effect of that drug is most useful in preventing collapse if parturition is prolonged.

On the other hand, if the dead puppies are presented first their delivery is often followed by normal parturition from the opposite horn.

This trouble is due to unilateral metritis and may or may not have been preceded by a more or less acute attack of "uterine colic," as described so ably by Mr. W. A. Dickinson in the discussion which followed Professor Wright's essay.

This metritis probably arises from pressure causing stasis of uterine vessels, and is usually non-infective and results in a swollen, congested, thickened condition of the organ, which often takes several hours to return to its normal size, long after the healthy horn has done so. Indeed, palpation through the flank leaves the impression that it still contains a fœtus.

Like Professor Wright, I nowadays never douche. When a dead fœtus has been removed the use of a powerful lymphogogue such as glycerine, or a drachm of castor-sugar, introduced on a damp, sterile swab is the best

treatment. Antiseptics are uncalled for as a rule. Lymph is the best antiseptic and pituitrin may later be of service.

Whilst it is not uncommon for bitches, especially of the large breeds, to go a week or more over the normal period of gestation and then whelp normally, I always regard these cases with anxiety, being of opinion that the prolonged gestation is a serious strain upon the mother's constitution and that, when born, the puppies are usually so big and so vigorous as to cause a further excessive strain whilst nursing. I have met with many instances of grave collapse in nursing bitches, under these circumstances, when the puppies are 10-14 days old.

Such bitches, if very heavy in whelp, should have the strain upon the abdominal muscles and uterine ligaments relieved by the use of a broad body belt and the puppies, if numerous, should be divided up and half the litter put on a foster-mother if available, or be hand-reared.

I can fully endorse Professor Wright's opinion that inertia at one whelping predisposes to a recurrence at the next. Generally it is due to some uterine weakness, but I have met cases in which it seemed to be temperamental, the animal appearing in every way normal, bright and well, with os open and cervix obliterated, yet making no attempt at self-delivery.

These bitches are usually bad mothers, indolent and careless. On the other hand, the subjects of phantom pregnancy usually have the maternal instinct strongly developed, search for puppies and lactate freely. One such animal, a fox-terrier bitch, successfully fostered a collie puppy in my kennels.

In cases of doubtful pregnancy I have found X-rays a most useful aid in diagnosis.

Faithfully yours, DAVID ERIC WILKINSON.

4 The Terrace,
Woodford Green,
Essex.
July 7th, 1929.

Hysteria in Dogs.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—My attention was directed to a letter by Mr. J. F. D. Tutt on the above condition in your correspondence columns of April 13th, in which he says :—" The great majority of cases of true hysteria (which have no connection with distemper) often follow the feeding of some of the various hound meals and dog biscuits of questionable value and content, with which the market is flooded and which are extensively advertised."

From records kept by me, during the last two years, on some scores of cases of this condition in dogs, cases showing a wide territorial distribution throughout the Carrick district of Ayrshire, I have met many cases in kennels of different species of gun dogs, and also in the smaller varieties of pet dogs, that never tasted dog biscuits nor hound meals of any kind, because their guardians had heard and believed in that fallacy as the cause of hysteria.

Further, since the aforesaid letter from Mr. Tutt appeared in your columns, I have fed several of these subjects that had previous attacks, entirely on dog biscuit foods, supplied by a reputable firm, and now at the end of a ten weeks' trial they remain healthy—never once have they shown any indication of a renewed attack—whilst during that period fresh cases have occurred in dogs receiving diets of oatmeal, porridge, and " scraps " from the table, etc.

I feel that my experience has put paid to the former beliefs and contentions of the users of dog biscuits throughout this wide area.

Yours faithfully, W. GARDNER, M.R.C.V.S.

Woodside, Maybole.
1st July, 1929.

The Financial Aspect of Country Practice.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—Mr. Benson's suggested treatment for the condition which he describes in paragraph 2 of his letter to the *Veterinary Record*, dated 1st ult., is " co-operation " and not " competition." Personally, I do not wish to do away with competition ; that is, a healthy and not an antagonistic competition. A friendly competition with a friendly co-operation are what we want, and to attain that we must first of all become acquainted with each other. The only means of developing an acquaintance is to meet, and where can we get a better meeting place than at the various Divisional meetings of the N.V.M.A. ? I always say there is too much " shop " at these meetings and too little social amiability. I admit that a good professional " meal " is very enjoyable, but life is surely not made up entirely of that ? I feel that we are neglecting the one thing which would be a source of greater pleasure, that is the development of friendship. We should aim at becoming better acquainted with each other and arriving at a better understanding of each other's point of view. The natural outcome of this will be the growth of friendship and friendship will lead to unity, unity to co-operation and co-operation to strength. Though we are only a small profession numerically ; how powerful we would be if we were only united ! But, alas, I do not think there is a body of men in existence amongst whom there is less unity, and as long as we remain in that state, the position to which Mr. Benson refers will continue.

After fourteen years abroad, where I enjoyed the friendship and co-operation of colleagues, I returned to the old country nine years ago, thinking I would find the same happy state of affairs at home, but as time went on I was sadly disillusioned and greatly disappointed. It is true that I have discovered some good friends in the profession and I value their friendship, but I am sorry to say that I have also discovered some whose standard of ethics leaves much to be desired. Friendly rivalry is healthy for everybody concerned, but antagonistic competition is, to say the least, unbecoming in any professional man and degrading to the profession.

Yours faithfully, H. LLEWELLYN-JONES.

Denbigh.

Royal Sanitary Institute Congress.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—I would like to draw the attention of members of the profession to the Congress of the Royal Sanitary Institute which is being held in Sheffield from July 13th to 20th.

The Veterinary Hygiene Section meets on Thursday and Friday, 18th and 19th inst., when it is hoped that many members of the profession will be present, as the meetings and discussions will be of great interest to them.

I have also been asked to draw the attention of those who may be coming to the Congress to the fact that the members of the North Midland Division, N.V.M.A., on the suggestion of their President, Mr. J. S. Lloyd, propose entertaining all the Veterinary Delegates to a luncheon at the Grand Hotel, Sheffield, and a trip into Derbyshire on the Friday afternoon, when the meetings have concluded.

Invitation cards have been sent to those expected to be attending the Congress, and I should be glad if any Veterinary Delegate who has not been invited will inform me if he intends to be present.

Yours faithfully, WILLIAM TWEED,
Local Secretary, Veterinary Hygiene Section.

Town Hall,
Sheffield.
July 9th, 1929.

The Editor acknowledges the receipt of the following :—

" The Attachments of the Auditory Ossicles of the Common Mole (*Talpa Europea*)," by H. C. Wilkie, F.R.C.V.S., F.Z.S.

Report of a meeting of the South Eastern Division, N.V.M.A., from Major T. Dalling (acting Hon. Secretary).

Communications from Dr. H. H. Curson (Pretoria), and Mr. W. Jackson Young (Newcastle-upon-Tyne).